

Northern Neck Planning District Commission Virginia Coastal Zone Management Program Technical Assistance Grant FY 14, Task 45 Final Report



This project was funded by the Northern Neck Planning District Commission and the Virginia Coastal Zone Management Program at the Department of Environmental Quality through Grant #NA14NOS4190141 of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, under the Coastal Zone Management Act of 1972, as amended.

Northern Neck Planning District Commission, Virginia Coastal Zone Management
Program Technical Assistance Grant FY 14, Task 45
Final Report

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I. Coastal Management Support

NNPDC staff provide coastal management support to each of its four member counties, as well as well as to towns, non-profit environmental and land conservancy groups and the local chapter of Master Gardeners. Most of the support was in environmental mapping services. Additional support was provided on one on consultations, and by support letters. Other coastal management support by NNPDC staff included reviewing an environmental impact report for the VDOT salt dome structure at the Lottsburg Area Headquarters in Northumberland County. The following sections summarize the support given by NNPDC staff during the grant period.

Town Support

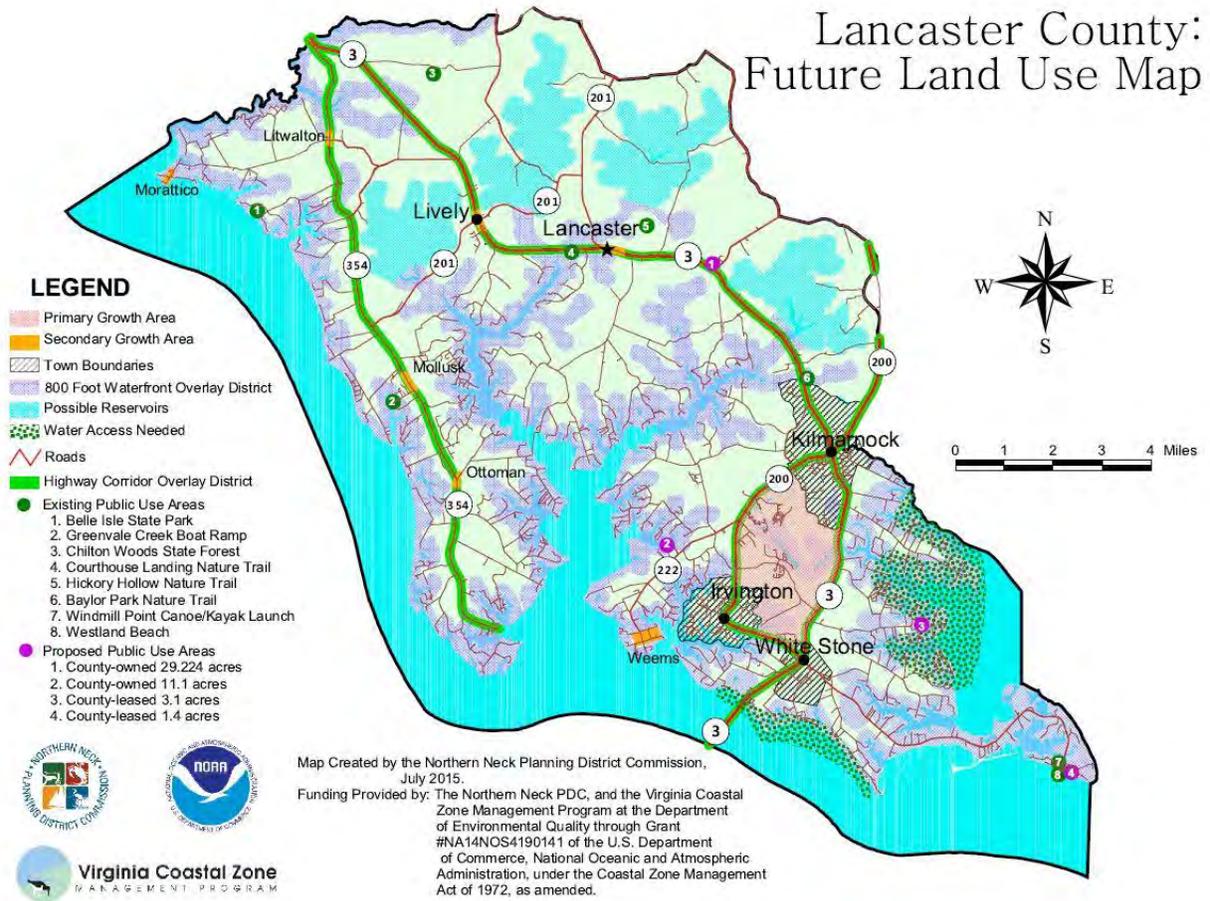
NNPDC staff assisted the village of Callao, and the Towns of Montross and White Stone with mapping of the project areas, sidewalk improvements and in site mapping for a grant application. These mapping efforts supported three successful DHCD grant applications and reporting requirements in the village/town downtown revitalization program. Many of the villages and towns of the Northern Neck have vacant buildings and underutilized business space. In order to reduce the development of new pristine agricultural or forested areas for businesses the NNPDC supports revitalizing existing building and infill development as an alternative to greenfield development. An example of the maps created in support of these projects is below.



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Lancaster County

NNPDC staff assisted Lancaster County staff by creating a forest cover map for the county. Lancaster County also requested printing of multiple large format maps of the Voting District Map for the Board of Supervisors' and public reference. In addition, Lancaster County was reviewing its Comprehensive Plan, and requested changes to the Future Land Use Plan Map that NNPDC staff created under a previous VACZM PDC Technical Assistance Grant. NNPDC staff added future public water access sites and public land acquired for future public uses to the Future Land Use Map. The revised Future Land Use Map that will be part of the revised Lancaster County Comprehensive Plan is shown below.



Northumberland County

Northumberland County requested assistance with the revision of the Comprehensive Plan. NNPDC staff reviewed and updated several chapters of the Comprehensive Plan, and updated 29 maps in the Comprehensive Plan. NNPDC obtained E911 address data and sorted 14,487 E911 address records into residential, business, public and semi-public categories for the updated version of the Existing Development map for the Comprehensive Plan. Other maps revised for

the Comprehensive Plan were maps showing future land use in the nine villages of the county, as well as maps showing Major Subdivisions, Topography, Hydrography, Prime Agricultural Soils, Sewered Areas, Soil Suitability for Conventional Septic Systems, Shrink-Swell Soils, FEMA Floodplains, National Wetland Inventory Wetlands, Historic Resources, Chesapeake Bay Act Resource Protection Areas, Potential Sites for Reservoirs, Watersheds, Depth to Seasonally High Water Table, Erosion Index of Soils, Soil Permeability, Shoreline Structures, Shoreline Erosion, and Public Access Sites. In order to keep the file size of this report a manageable size, only the first ten comprehensive Plan maps will be included as examples. The remaining maps will be available on the Northumberland County website (<http://www.co.northumberland.va.us/>) after the Board of Supervisors adopts the revised Comprehensive Plan.

Figure 1.1

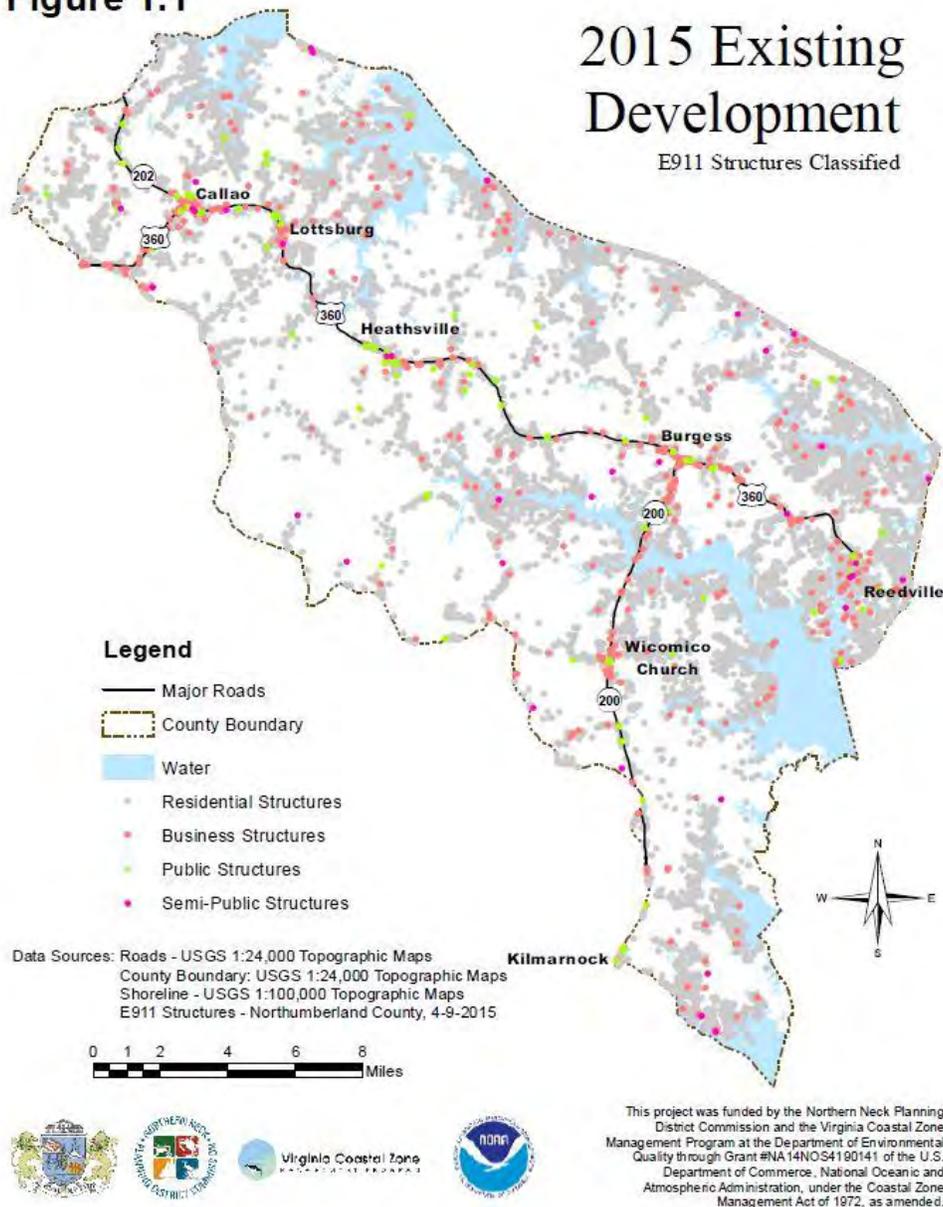
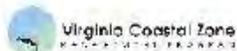
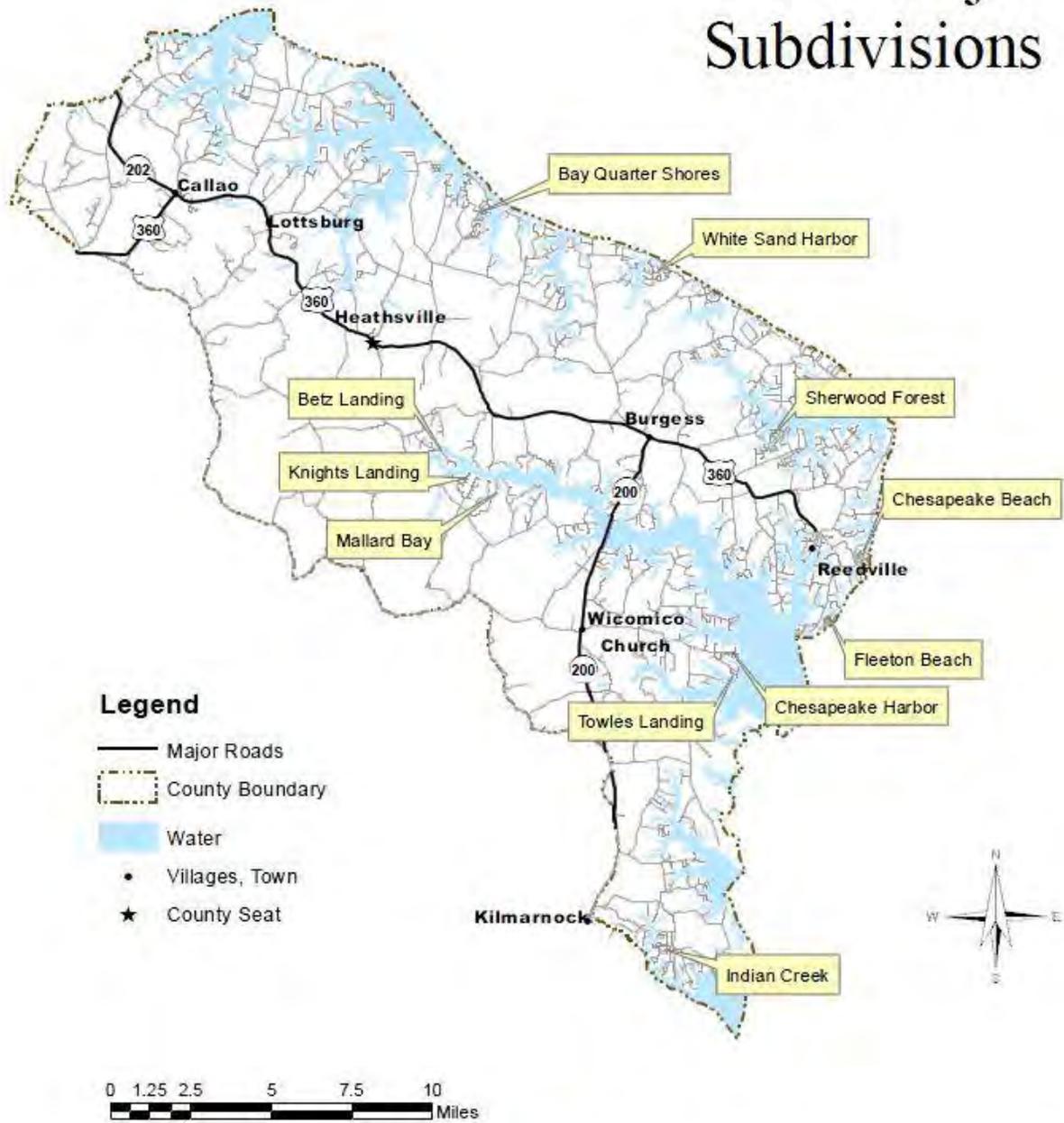


Figure 1.2

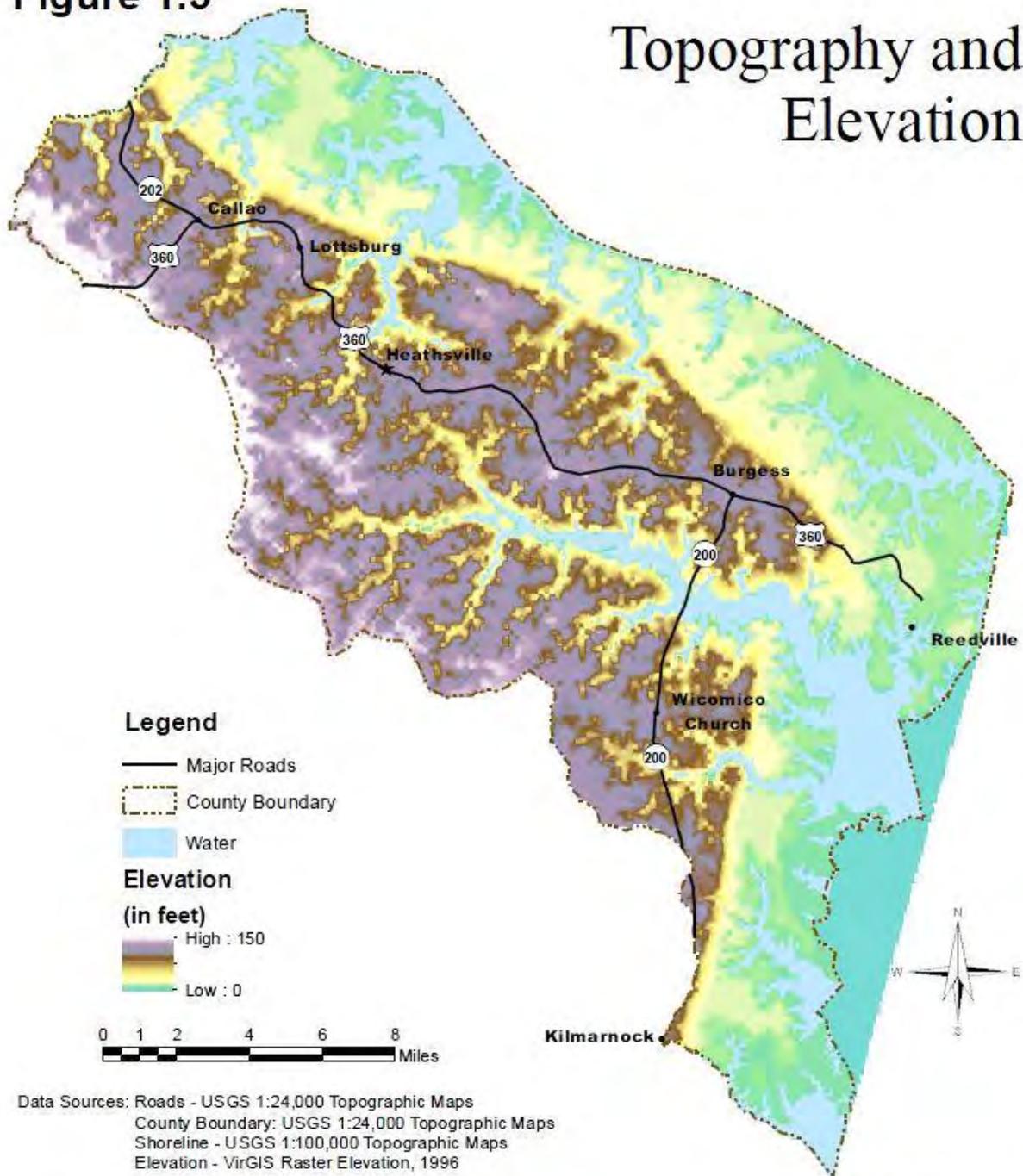
Major Subdivisions



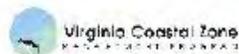
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Figure 1.3

Topography and Elevation



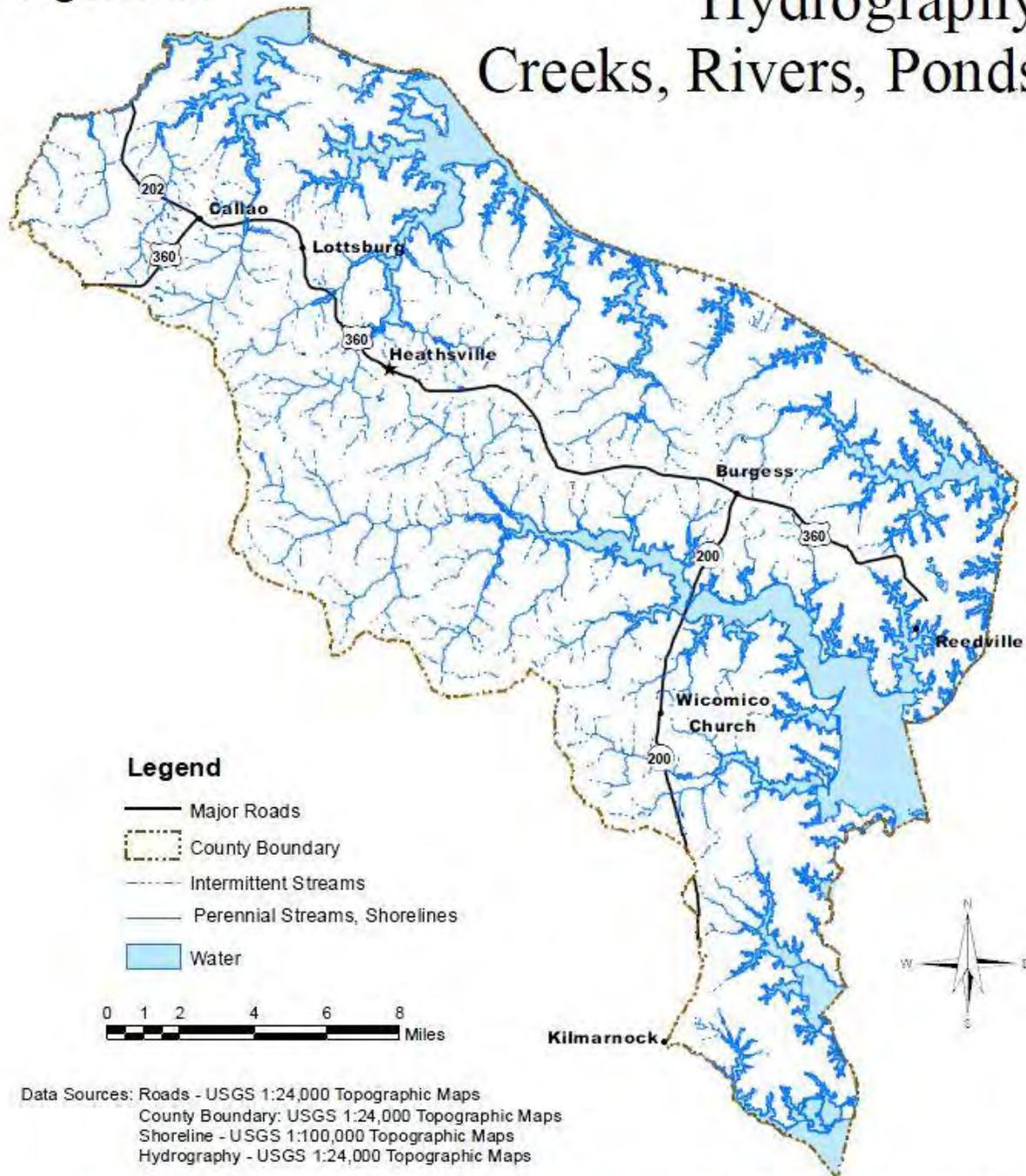
Data Sources: Roads - USGS 1:24,000 Topographic Maps
County Boundary: USGS 1:24,000 Topographic Maps
Shoreline - USGS 1:100,000 Topographic Maps
Elevation - VirGIS Raster Elevation, 1996



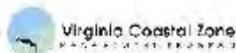
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Figure 1.4

Hydrography Creeks, Rivers, Ponds



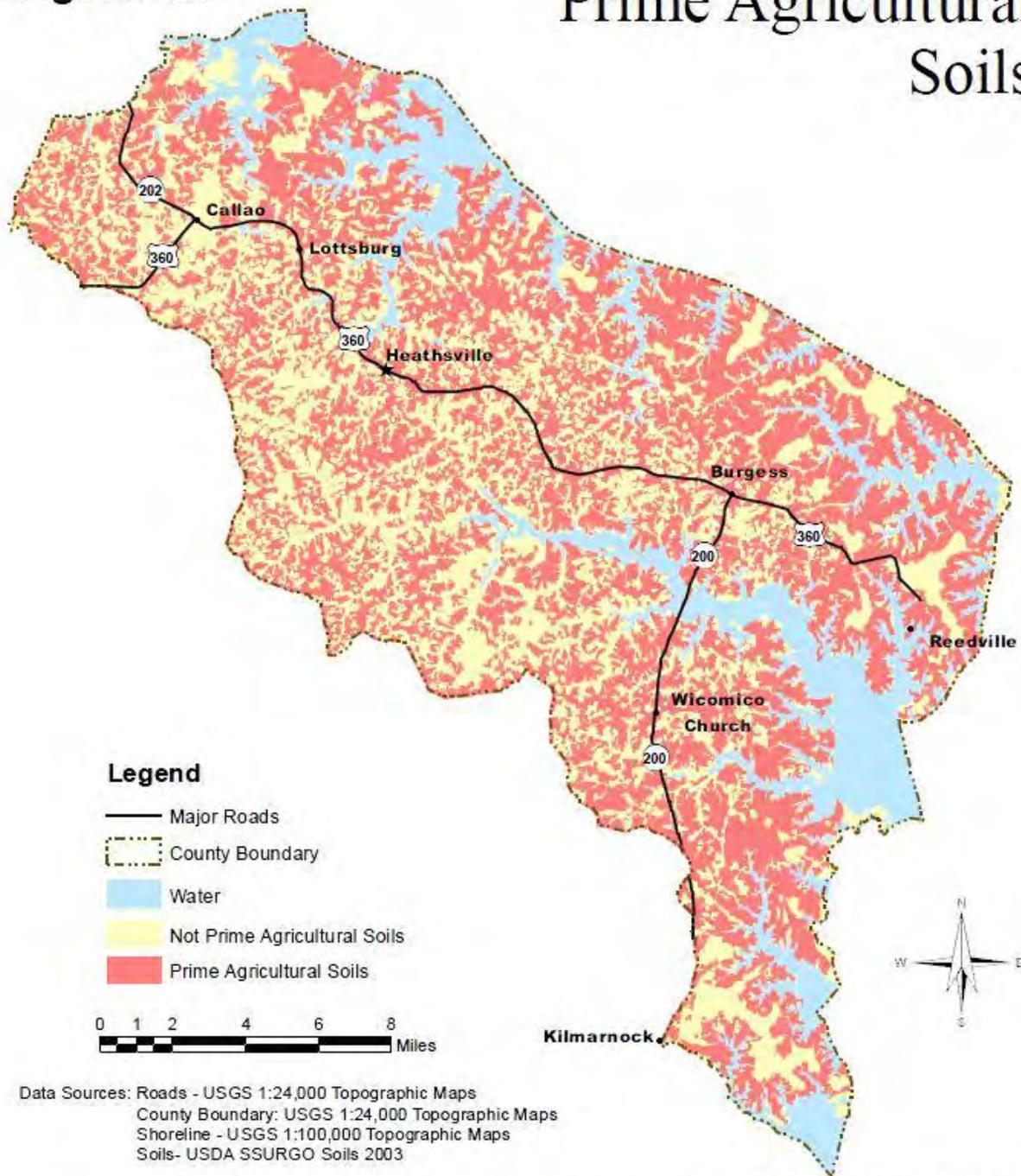
Data Sources: Roads - USGS 1:24,000 Topographic Maps
County Boundary: USGS 1:24,000 Topographic Maps
Shoreline - USGS 1:100,000 Topographic Maps
Hydrography - USGS 1:24,000 Topographic Maps



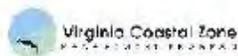
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Figure 1.5

Prime Agricultural Soils



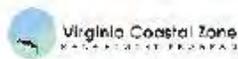
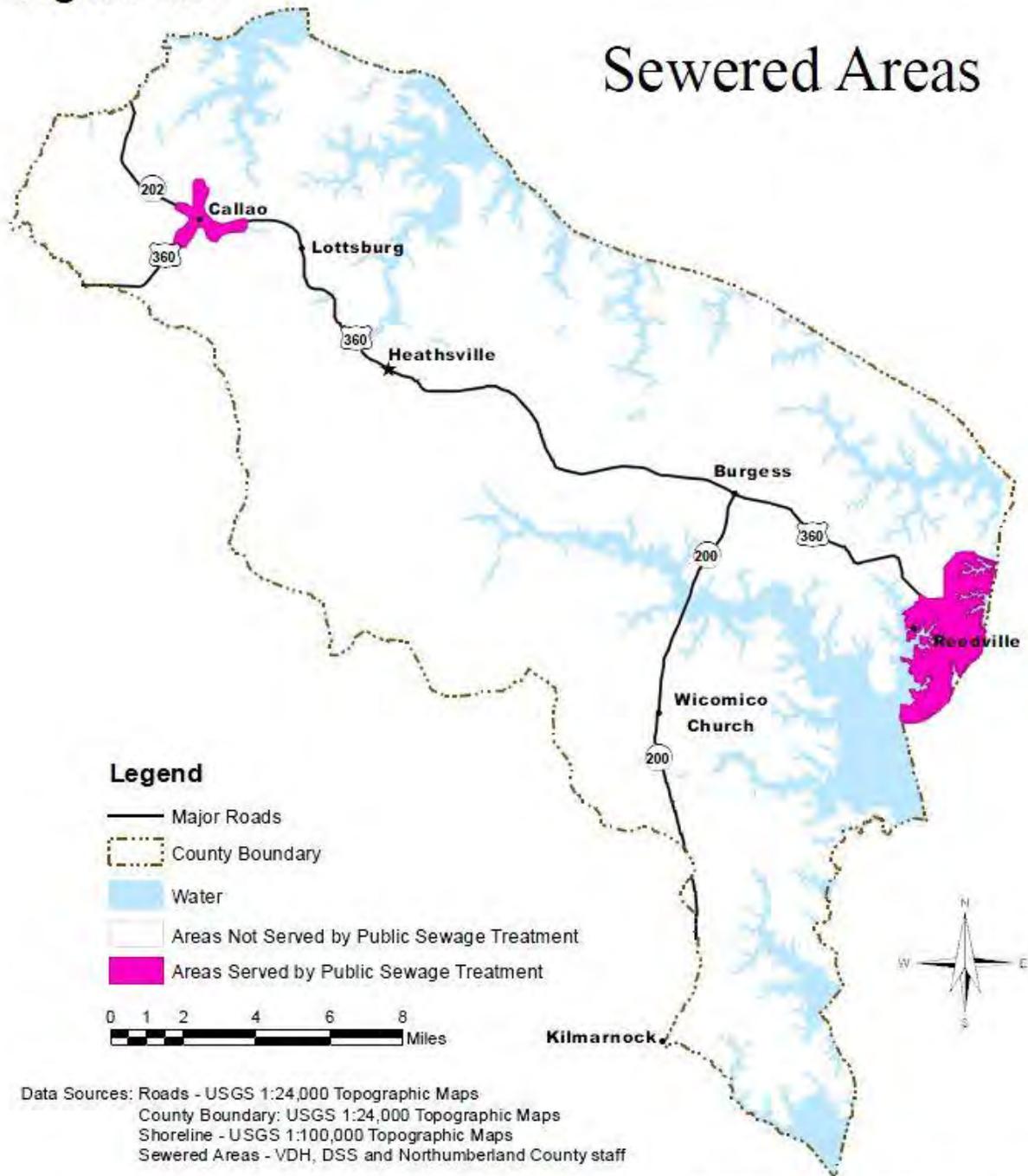
Data Sources: Roads - USGS 1:24,000 Topographic Maps
County Boundary: USGS 1:24,000 Topographic Maps
Shoreline - USGS 1:100,000 Topographic Maps
Soils- USDA SSURGO Soils 2003



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Figure 1.6

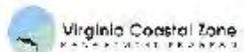
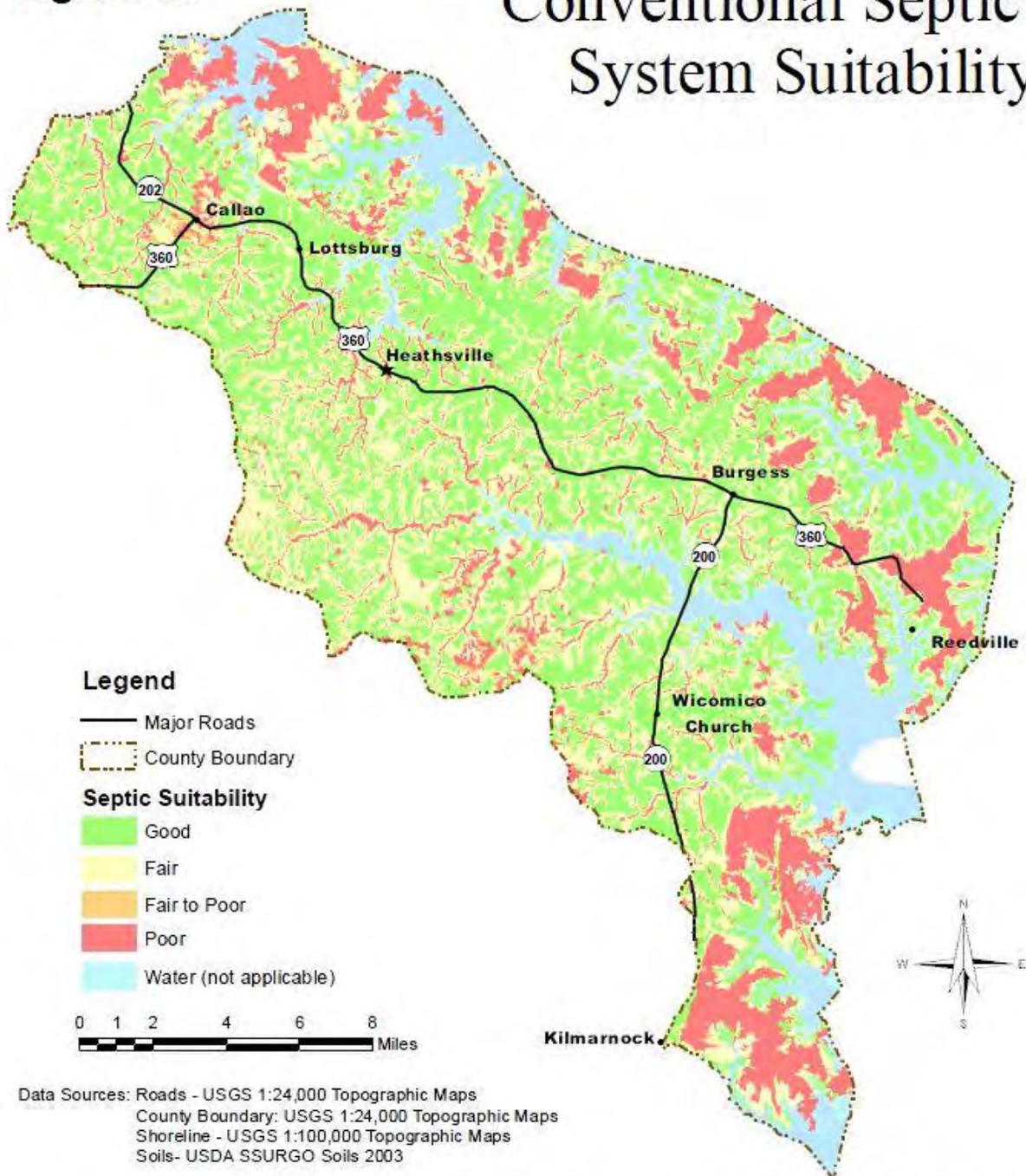
Sewered Areas



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Figure 1.7

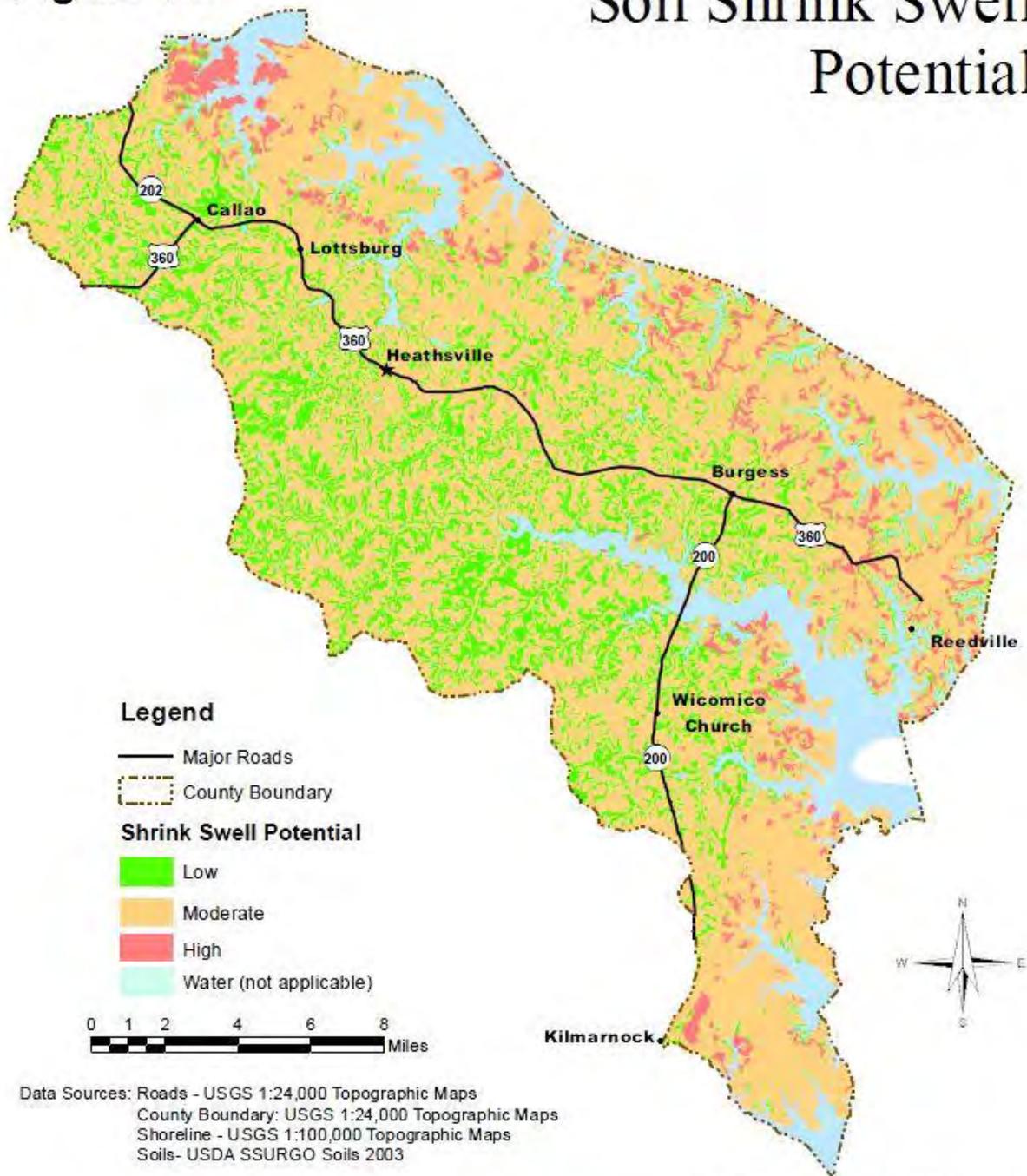
Conventional Septic System Suitability



This project was funded by the Northern Neck Planning District Commission and the Virginia Coastal Zone Management Program at the Department of Environmental Quality through Grant #NA14NO54180141 of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, under the Coastal Zone Management Act of 1972, as amended.

Figure 1.8

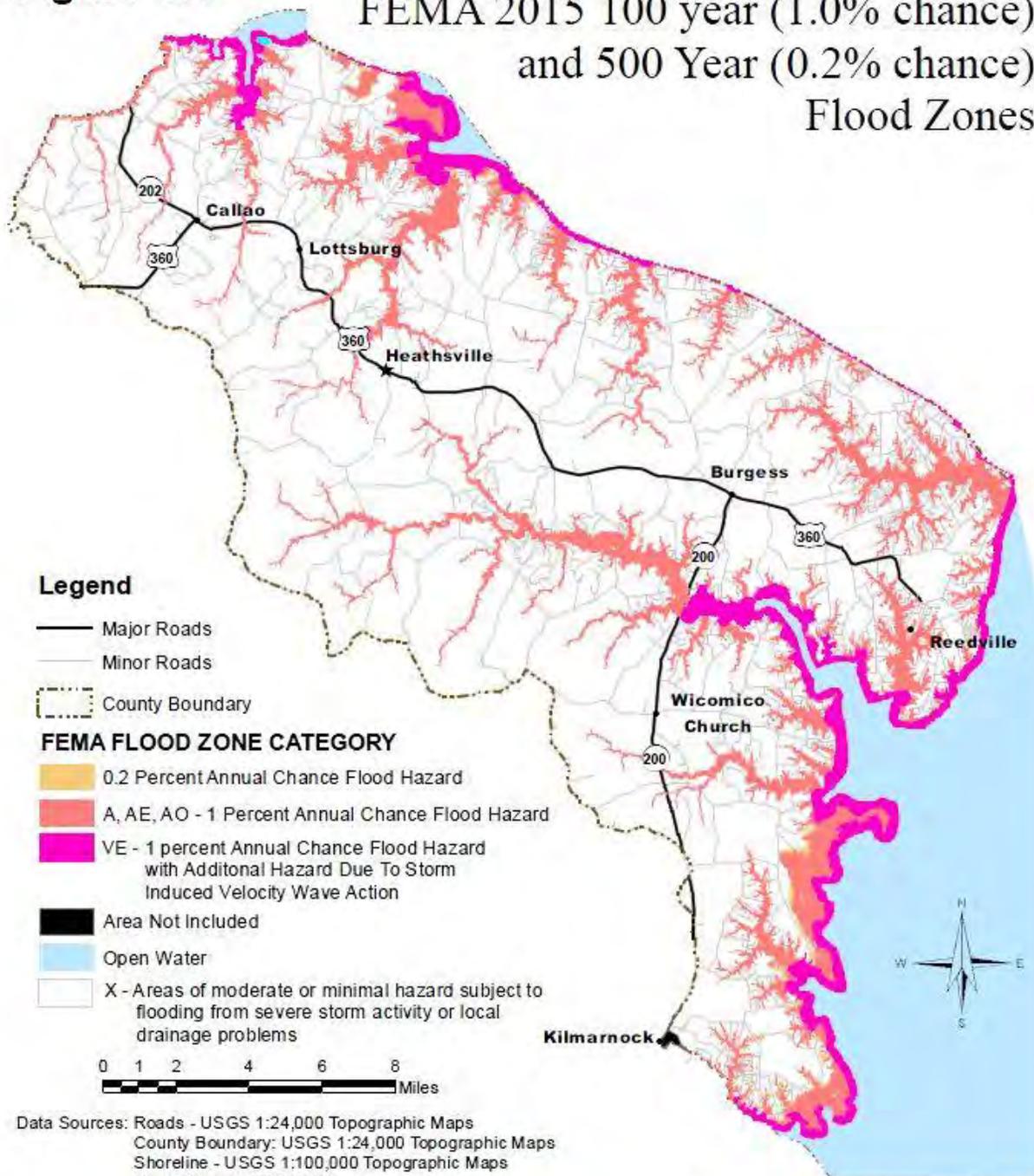
Soil Shrink Swell Potential



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Figure 1.9

**FEMA 2015 100 year (1.0% chance)
and 500 Year (0.2% chance)
Flood Zones**



Legend

- Major Roads
- Minor Roads
- - - County Boundary

FEMA FLOOD ZONE CATEGORY

- 0.2 Percent Annual Chance Flood Hazard
- A, AE, AO - 1 Percent Annual Chance Flood Hazard
- VE - 1 percent Annual Chance Flood Hazard with Additional Hazard Due To Storm Induced Velocity Wave Action
- Area Not Included
- Open Water
- X - Areas of moderate or minimal hazard subject to flooding from severe storm activity or local drainage problems

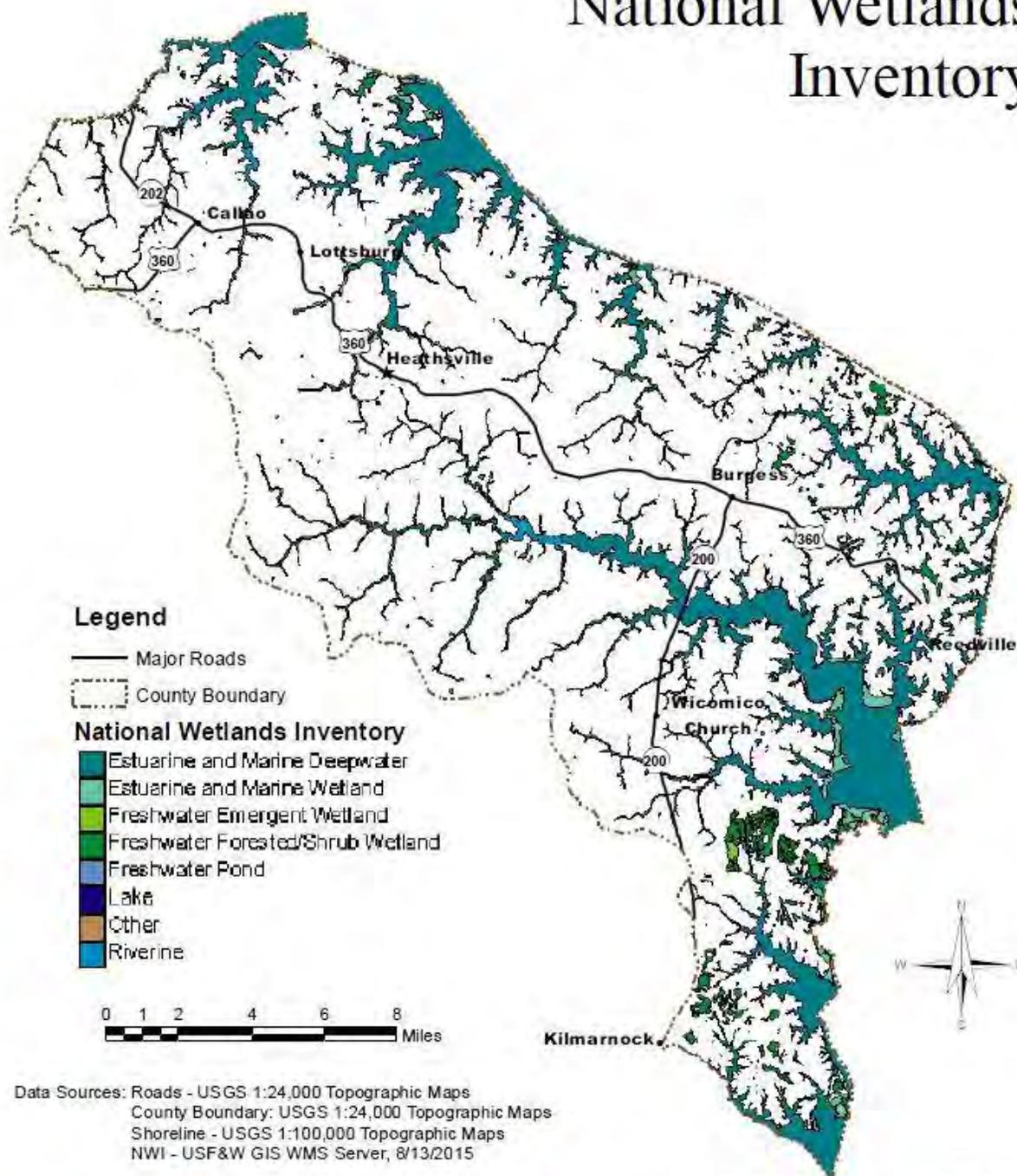
0 1 2 4 6 8 Miles

Data Sources: Roads - USGS 1:24,000 Topographic Maps
 County Boundary: USGS 1:24,000 Topographic Maps
 Shoreline - USGS 1:100,000 Topographic Maps
 Flood Zones- FEMA 2015

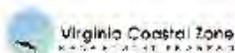


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National Wetlands Inventory



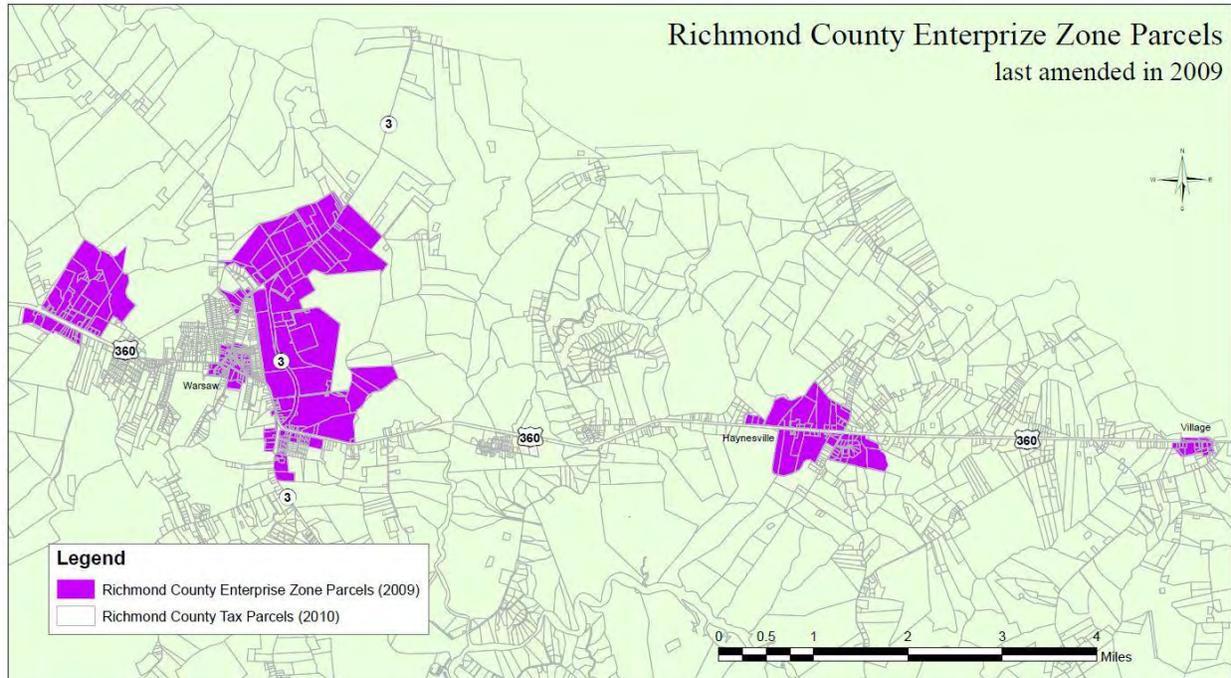
Data Sources: Roads - USGS 1:24,000 Topographic Maps
 County Boundary: USGS 1:24,000 Topographic Maps
 Shoreline - USGS 1:100,000 Topographic Maps
 NWI - USF&W GIS WMS Server, 8/13/2015



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Richmond County

Richmond County requested a map showing the enterprise zone parcels within the Town of Warsaw and Richmond County for economic development purposes. NNPDC created the map shown below.

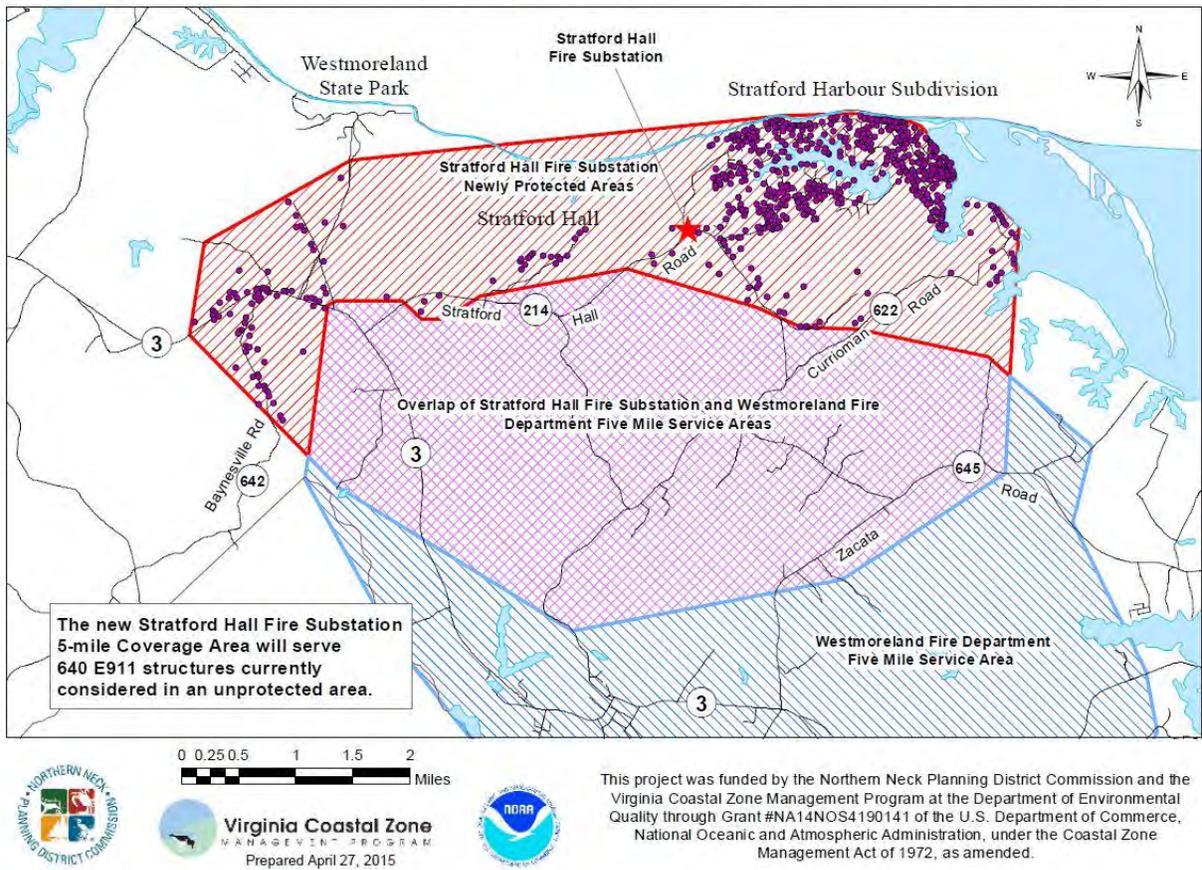


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Westmoreland County

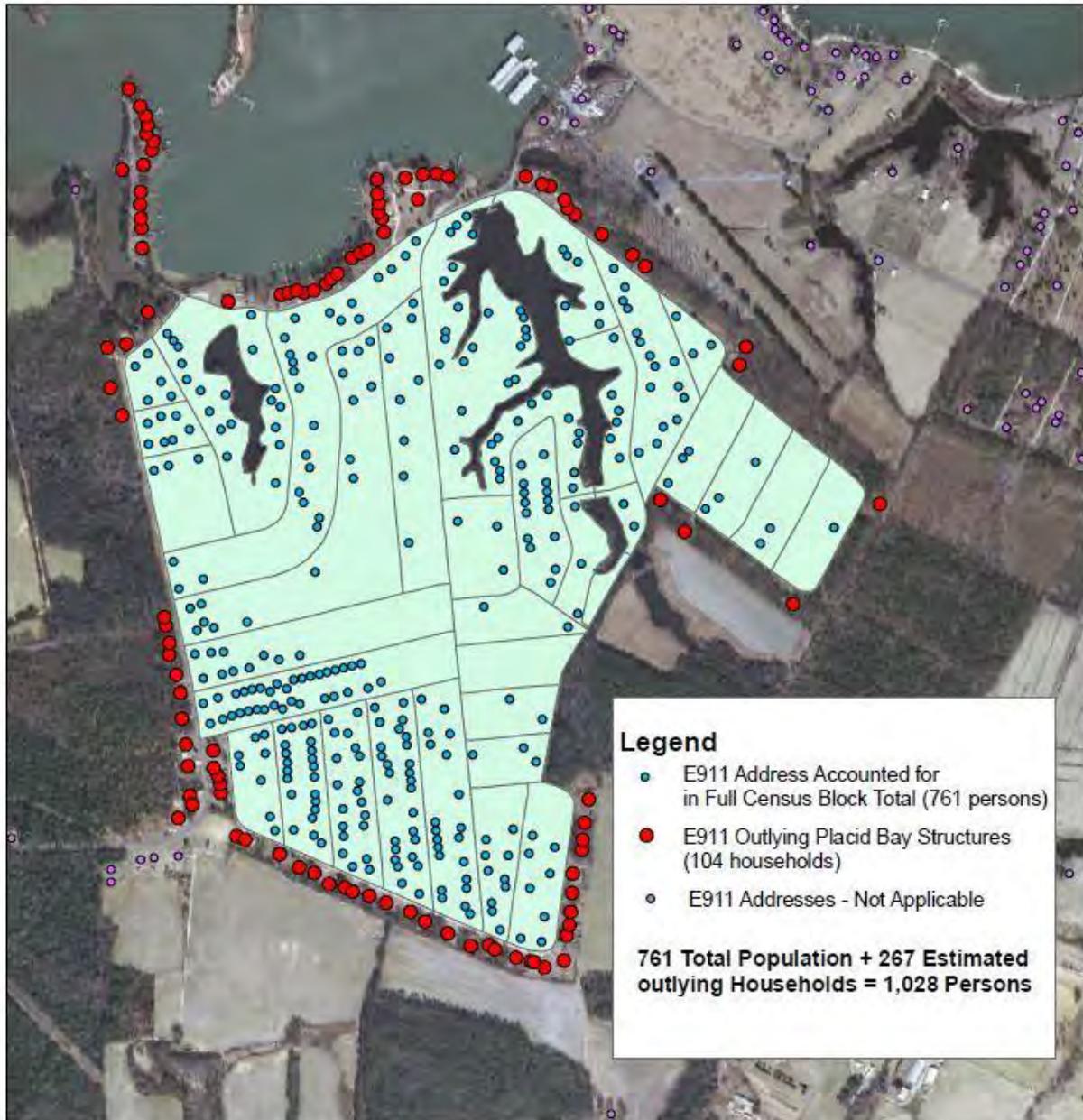
Westmoreland County requested maps showing five road mile service areas of existing fire stations and a newly proposed fire substation to determine the number of overlapping E911 structures served, as well as E911 structures to be served by the proposed new fire department substation. After the working maps were created and utilized to support the decision to locate a fire department substation at the site, Westmoreland County staff requested display maps to send to citizens to support a fund raising effort to solicit donations to build the new fire substation. The final display map will be shown on the next page, and other maps are available upon request.

Stratford Hall Fire Substation Five Mile Service Area - Newly Protected Areas



In 2011, Tropical Storm Lee dumped 29 inches of rain on Placid Bay Estates, in Westmoreland County, near Oak Grove, VA. The ensuing deluge destroyed the dam in the subdivision that held back water for Placid Bay Lake. The homeowners in the subdivision requested assistance from the county to rebuild the dam, as a road of the subdivision was built on top of the dam. Those citizens on the other side of the dam were without access to their homes, as the road was also destroyed. Westmoreland County, in the process of seeking grant funding, wanted to know how many citizens lived in the subdivision to see what type of rates would be reasonable to charge for a special tax district to rebuild the dam and the road. NNPDC staff used 2010 US Census Data and calculated the population of the subdivision to be 761 persons. After discovering that only 761 persons resided in the subdivision, Westmoreland County staff requested another map to include those households adjacent to the subdivision, which required NNPDC staff to estimate partial census block population. NNPDC staff created that map and found there were a total of 1,028 persons within and adjacent to the subdivision. The final map is shown below.

Westmoreland County Placid Bay Subdivision 2010 Census Population - Outside Full Census Blocks

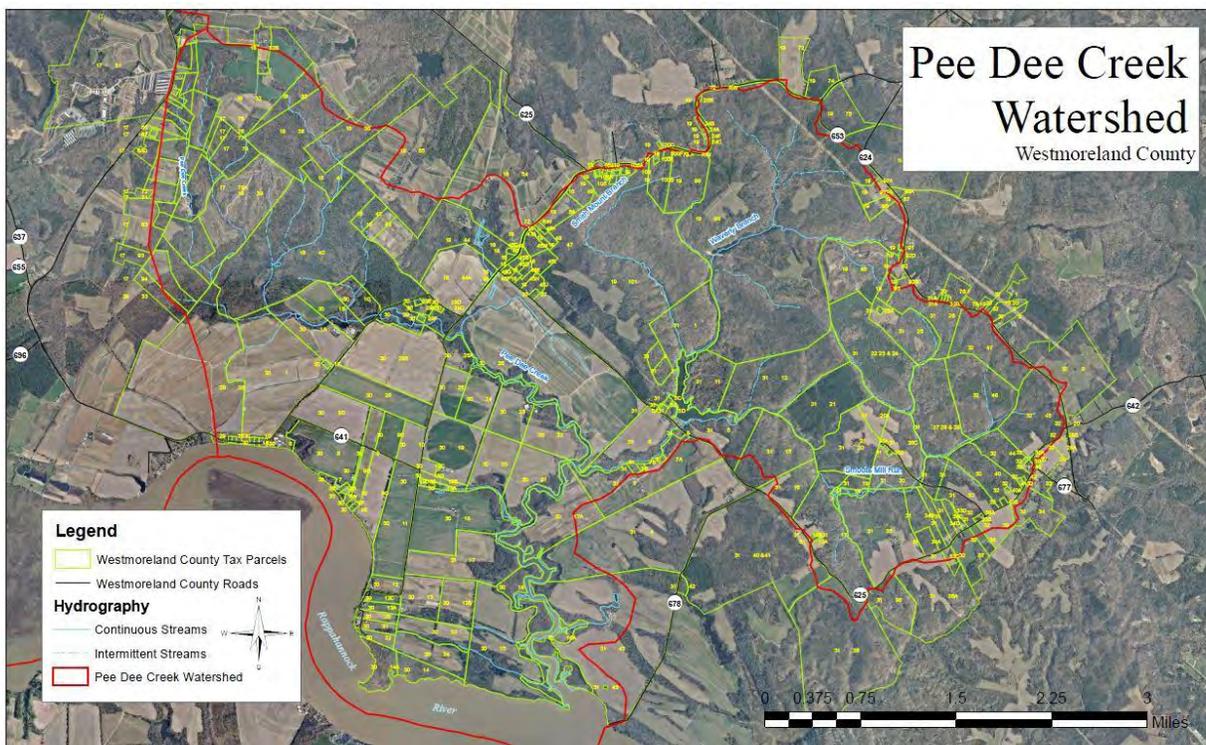


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Friends of the Rappahannock

The NNPDC has collaborated with the Friends of the Rappahannock (FOR) on outreach efforts in previous grants. Staff from FOR approached NNPDC staff to request a large format map for a watershed of Westmoreland County to be targeted for education and outreach regarding forested buffers. The area chosen (Pee Dee Creek) had, in previous years, been an area where there was confusion as to the extent of Chesapeake Bay Resource Protection Areas, which resulted in an enforcement action. The differentiation between agricultural drainage ditches and perennial streams were at the heart of the confusion. FOR staff planned on holding a public meeting to gauge interest in working with landowners of agricultural lands to determine areas where grassed and forested buffers could be created to help filter agricultural runoff. The map created is shown below.

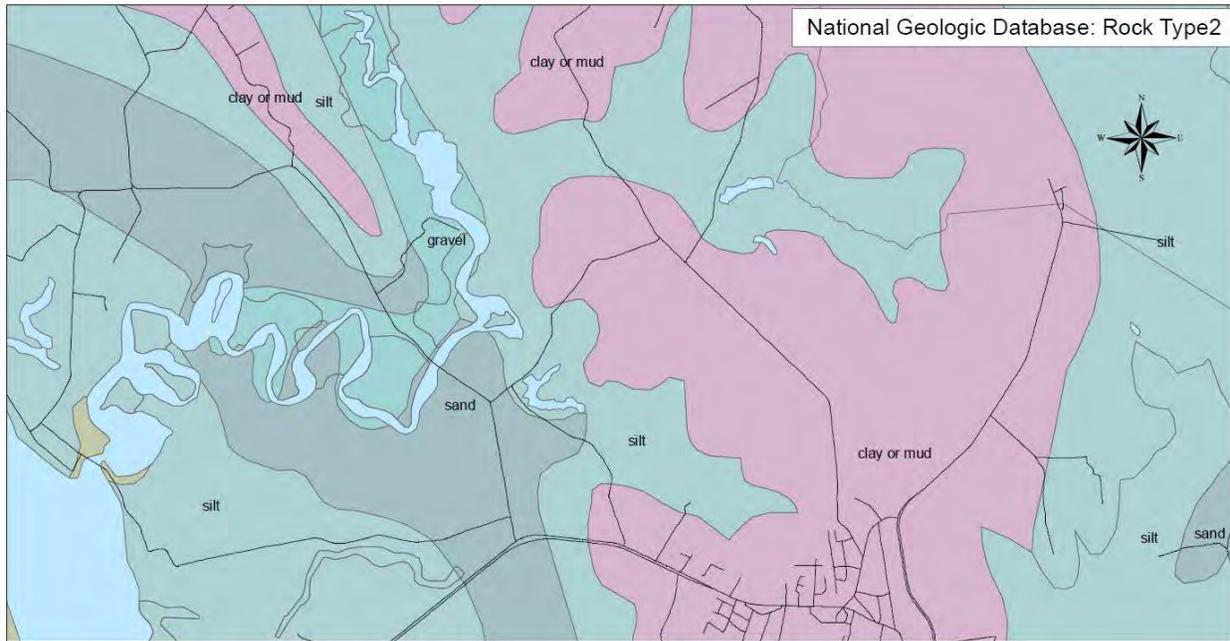


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Menokin

Staff from Menokin, a historic site near Warsaw, VA dedicated to preserving the legacy of Francis Lightfoot Lee, an original signer of the Declaration of Independence, contacted the NNPDC for geologic maps of the area. The geologist hired by Menokin explained that they were attempting to locate local sand deposits that were used to make the bricks at Menokin in the 1700s. The rationale was that the deposits would be nearby, as transporting heavy items overland

was very difficult in the mid eighteenth century. NNPDC staff created three maps, one showing the time period of the deposits and two different rock type maps from the National Geologic Database. One of the rock type maps is shown as an example below.



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Northern Neck Chesapeake Bay Public Access Authority

NNPDC staff, which also serves as staff to the Northern Neck Chesapeake Bay Public Access Authority (NNCBPAA), created two maps of potential properties whose owners are considering either donating land or a public access conservation easement. One property is located in Northumberland County and the other property is located in Lancaster County. The Northern Neck Land Conservancy was instrumental in informing landowners that the Access Authority could accept donated land and hold public access conservation easements. NNPDC staff took county digital tax parcels and overlaid the tax parcels with the most recent Virginia Base Mapping Aerial Photographs to create the maps. The Lancaster County parcel is shown as an example on the next page.

NNPDC and NNCBPAA staff assisted the Virginia Outdoors Foundation (VOF) by providing a letter of support for the Virginia Land Conservation Fund for a historic property in Northumberland County, Ditchley, home of Jessie Ball DuPont. VOF staff mentioned that the property is waterfront and has an area that could be suitable for a canoe/kayak launch. NNPDC staff drafted a letter for the NNPDC Executive Director to sign for inclusion in the VOF's grant application package.

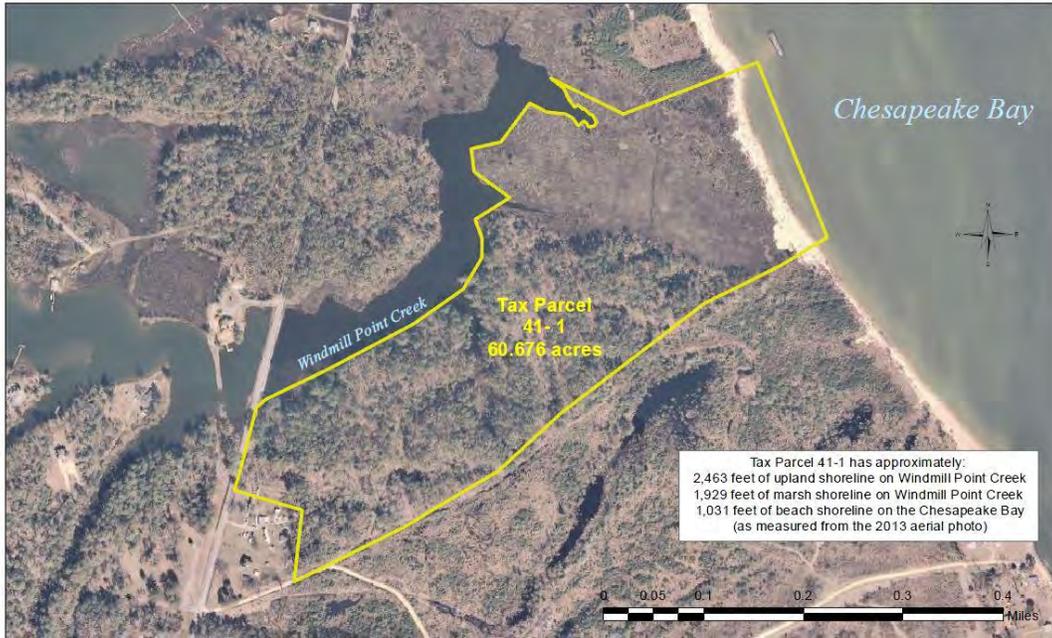


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Northern Neck Land Conservancy

The Northern Neck Land Conservancy (NNLC) and the Northern Neck Planning District Commission have had a mutually beneficial relationship since the NNLC's inception. NNPDC and NNLC staff have participated in workshops, education and outreach events and helped form the Northern Neck Environmental Consortium. NNPDC staff routinely creates maps for NNLC staff to share with owners who are interested in investigation having a conservation easement place on their properties. Having detailed maps, aerial photos, acreages of wetlands, depth of water for waterfront properties created by NNPDC staff help NNLC staff value and appraise conservation easement value, as well as educate the land owner of the assets present on their property. NNPDC staff introduced NNLC staff to the VACZM's Virginia Ecologic Valuation Assessment (VEVA) and the NNLC now requests VEVA maps for every property considered for conservation. During this grant period, NNPDC created environmental maps for five properties, and also measured shoreline length, and wetland acreages of the properties. An example set of maps for one of the properties is shown on the following pages.

Henry Island Development Company, LLC., Tax Parcel 41 -1: Aerial Photo



This map was created on July 7, 2015.



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Henry Island Development Company, LLC., Tax Parcel 41 -1: USGS Topo

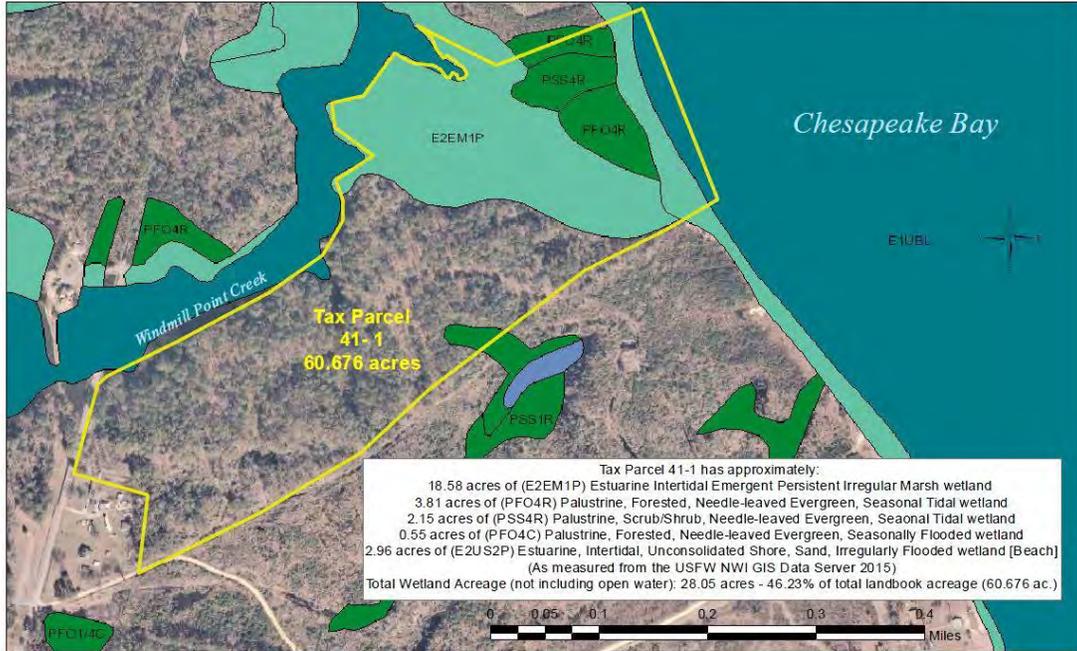


This map was created on July 7, 2015.



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Henry Island Development Company, LLC., Tax Parcel 41 -1: NWI Wetlands

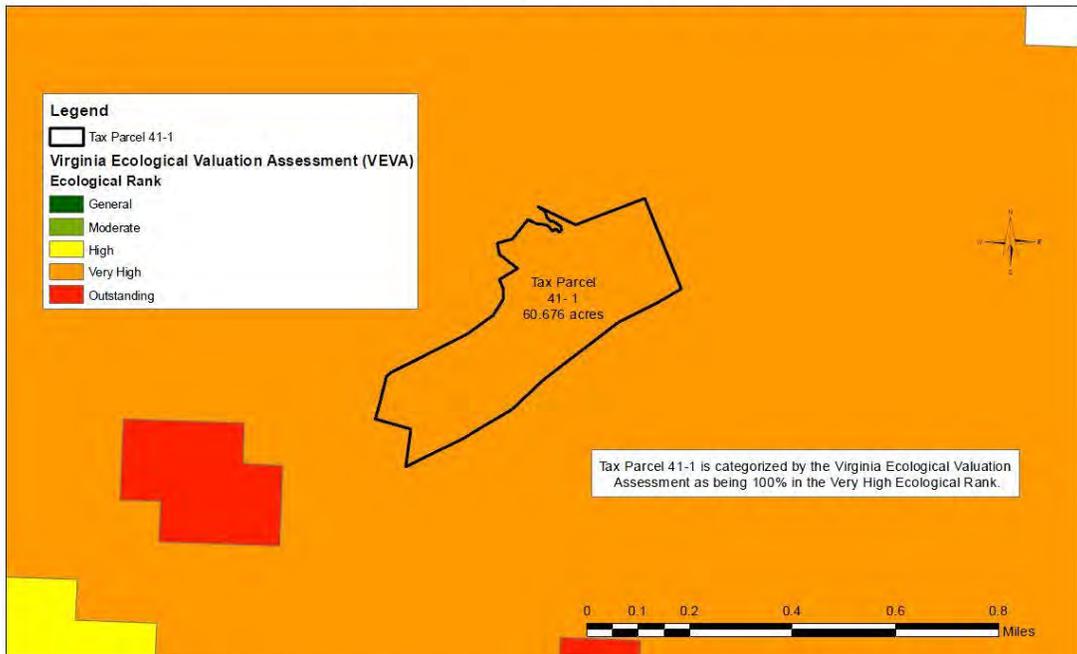


This map was created on July 7, 2015.



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Henry Island Development Company, LLC., Tax Parcel 41 -1: VEVA



This map was created on July 7, 2015.



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Northern Neck Master Gardeners Shoreline Assessment Stewards Support

Last year, NNPDC staff reached out to the local chapter of the Northern Neck Master Gardeners (NNMG) to offer mapping assistance for their shoreline assessment program. Several members of the NNMGs attended advanced training on water quality and shoreline assessment, and have been offering their assessment services to waterfront owners with shoreline erosion problems in Northumberland and Lancaster Counties. NNPDC staff met with the Master Gardeners and explained the VACZM and the PDC Technical Assistance grant, as well as the wealth of data housed in the NNPDC Geographic Information System. NNPDC staff offered to create maps for their shoreline assessment clients, to include most importantly, an aerial photo with the fetch associated with the property, a zoomed in aerial photo with the approximate shoreline length, a USGS 1:24,000 Topographic Map (to show elevation contours), a direction map, a National Wetlands Inventory map, and a soils map. Lancaster County has 2 foot elevation contours that were created from the 2009 Virginia Base Mapping Program's aerial photos, and if the property was in Lancaster County, then NNPDC staff would create a 2 foot elevation contour map in addition to the other six maps mentioned above. During the grant period, NNPDC created 119 shoreline assessment maps for 18 individual properties in Northumberland and Lancaster Counties. NNPDC staff did not anticipate the high level of response from the Master Gardeners, and now that Virginia Department of Environmental Quality has re-instituted the State Shoreline Advisory Service (SEAS), NNPDC staff expect the workload to diminish over the coming years as homeowners seek assistance from SEAS staff instead of the Master Gardeners. An example of one of the shoreline assessment map sets for a property is shown below.

Shoreline Assessment Aerial Photo and Fetch Map: Warren 3297 Windmill Point Road



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Map Created April 6, 2015.

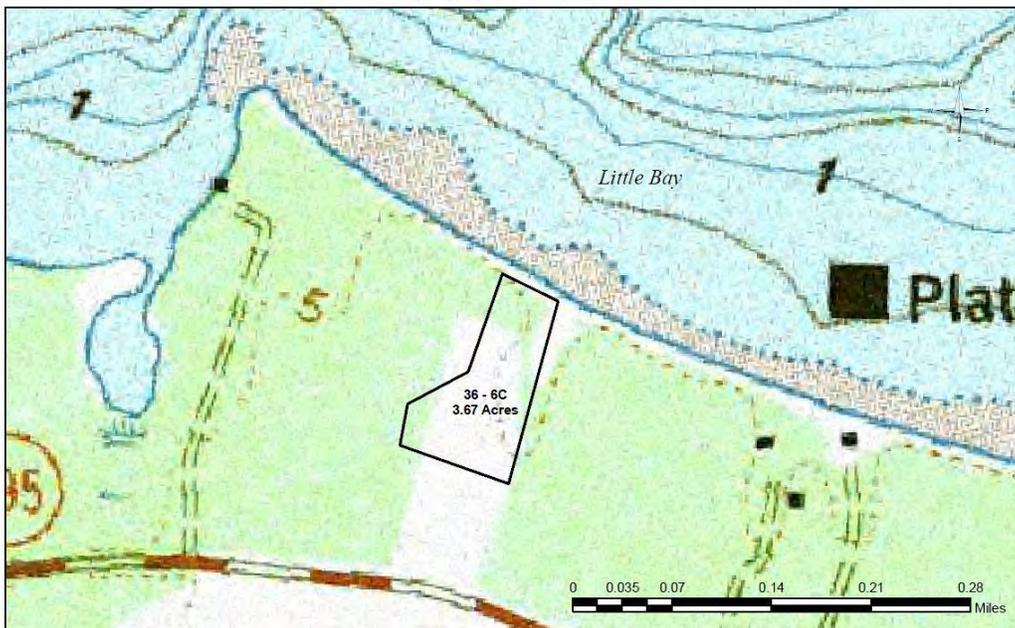
Shoreline Assessment Aerial Photo Zoomed Map: Warren 3297 Windmill Point Road



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Map Created April 6, 2015.

Shoreline Assessment USGS Topographic Map: Warren 3297 Windmill Point Road



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Map Created April 6, 2015.

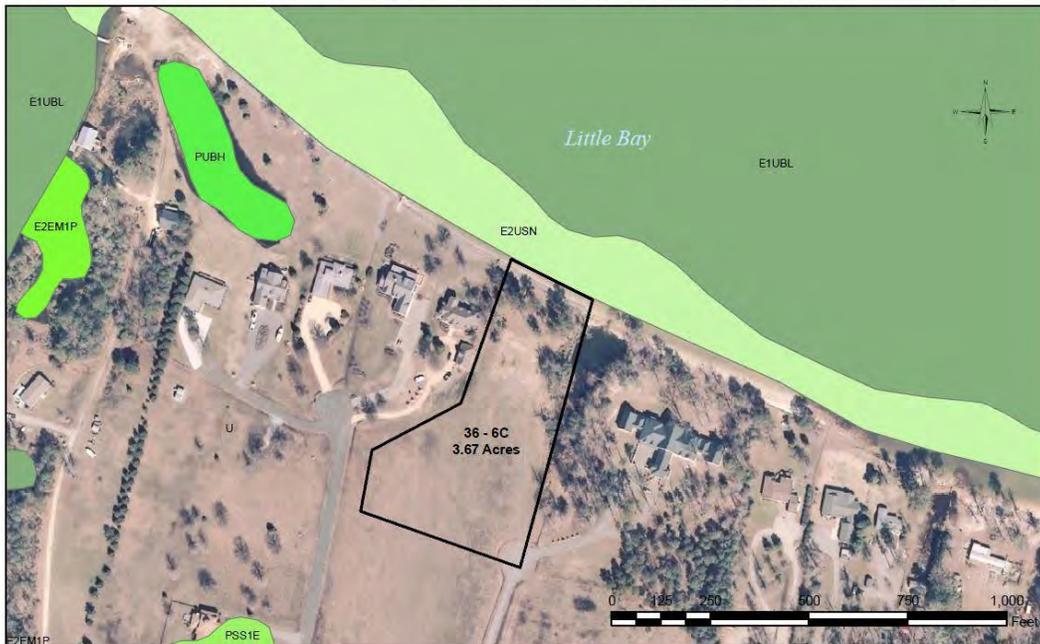
Shoreline Assessment 2 foot Elevation Contours Map: Warren 3297 Windmill Point Road



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Map Created April 6, 2015.

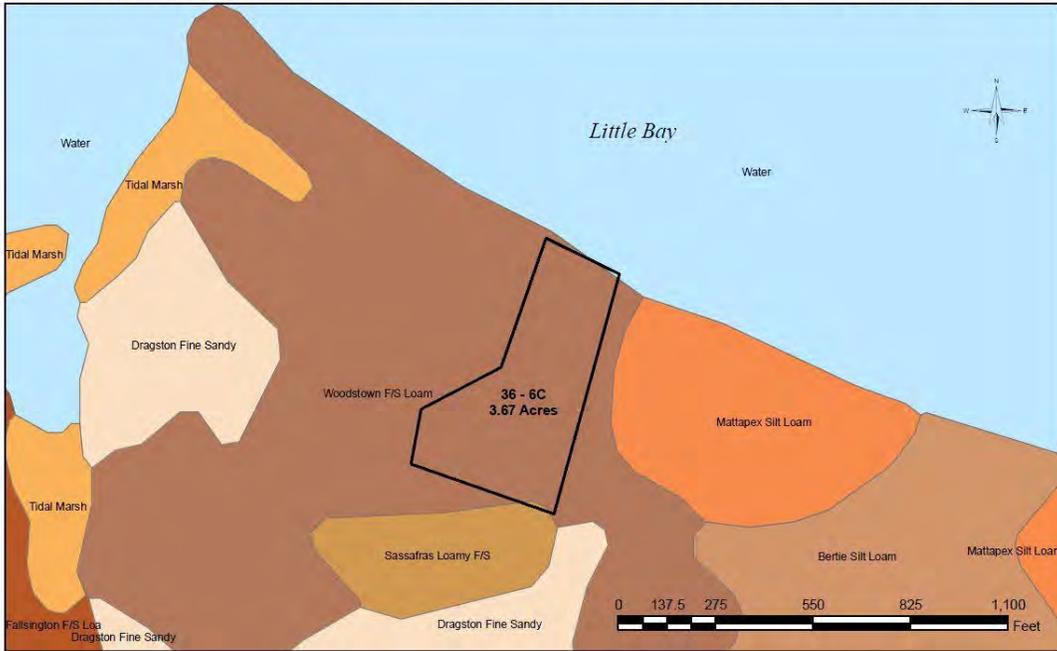
Shoreline Assessment National Wetlands Inventory Map: Warren 3297 Windmill Point Road



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Map Created April 6, 2015.

Shoreline Assessment SSURGO Soils Map: Warren 3297 Windmill Point Road



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Map Created April 6, 2015.

Shoreline Assessment Direction Map: Warren 3297 Windmill Point Road



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Map Created April 6, 2015.

Mapping Support VDEM/FEMA House Elevations

The Northern Neck Planning District Commission, upon request of Lancaster and Northumberland Counties, have been administering VDEM/FEMA house elevation matching grant projects over the last few years. NNPDC staff have assisted in the elevation of homes above the flood elevation in the Windmill Point area of Lancaster County and the village of Lewisetta in Northumberland County. NNPDC staff have created floodplain maps of the properties to be elevated to support the documentation for the grant from VDEM/FEMA. NNPDC staff created FEMA floodplain maps for five properties during the grant period. An example of one of the maps that were created is shown below.

Bowers, 259 Judith Sound Road, Lewisetta, Tax Parcel 4B (2) 1 8: 2015 FEMA Flood Zones



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II. Local Planning Coordination and Training

NNPDC staff conducted the first training meeting on November 11, 2014. The purpose of the training session was for the Virginia Department of Conservation and Recreation (DCR) staff to present the Virginia Outdoors Plan (VOP) regional chapter for your region and review regional outdoor recreation and land conservation initiatives. The 2013 Virginia Outdoors Plan was the first plan to be available solely online. DCR staff utilized the state's network of regional Planning District Commissions (PDC) to assist in the creation of the 2013 VOP. Regional PDC staff work closely with their member governments and are knowledgeable on outdoor recreation opportunities in their region, which makes them a perfect vehicle to reach out to county staff in the Commonwealth. The purpose of the training session was to present the Virginia Outdoors Plan (VOP) regional chapter for the region and review regional outdoor recreation and land conservation initiatives.

NNPDC staff discussed their work with Lancaster County on applying for the Virginia Department of Game and Inland Fisheries Grants to Localities for Boating Infrastructure for a boat ramp at the Windmill Point Marina. NNPDC staff explained that the marina had leased Lancaster County land adjacent to the boat basin to construct a public boat ramp. The facility will be classified as a large powerboat launching facility with parking for 25 vehicles with boat trailers. At the time of the meeting, the grant had been submitted, but had not been approved. Lancaster county staff added details about the boat ramp project to supplement NNPDC staff comments.

NNPDC staff informed DCR staff regarding the Great Wicomico Fishing Pier in Northumberland County, which was partially funded in by the VACZM in 2001. Northumberland County staff stated that an L-head extension was added to the pier, along with a step down platform to be used by those interested in crabbing. NNPDC staff mentioned that improvements were needed at Bush Mill Stream Natural Area Preserve to allow for visitation of the site by paddlers.

NNPDC staff mentioned that they had assisted Richmond County in applying for the Virginia Department of Game and Inland Fisheries Grants to Localities for Boating Infrastructure for a medium powerboat launching facility on Farnham Creek. This site, it was explained, has a rudimentary mud and gravel boat ramp, but that the ramp was mostly unusable for trailers as there was a deep hole at the end of the ramp. The Farnham Creek Landing Site is designated as one of the stops along the Virginia Birding and Wildlife Trail, and repairing the boat ramp and adding a courtesy pier parallel to the shoreline was part of the grant improvement project. As was the case with the Lancaster County grant, at the time of the meeting, the grant had not been awarded.

Discussion turned to Westmoreland County, and future boating access at James Monroe's Birthplace near Colonial Beach. A VDOT grant was secured by Westmoreland County that is enhancing the site and would provide road access to Monroe Creek. Westmoreland County staff

explained that at that point in the creek, the depth was not sufficient for powerboats, so the access point would be for paddle craft such as kayaks and canoes. Westmoreland County staff relayed that the road would need to be built first, to be able to get materials to the site to build the canoe and kayak launch infrastructure.

Discussion then turned to working watermen in the region, and the fact that they are not allowed to use the majority of DGIF public boat ramps, NNPDC staff had recently learned. The majority of the DGIF public boat ramps were funded by federal recreational boat gasoline taxes, and in turn, were intended to serve recreational boaters only. Neither DCR staff nor NNPDC staff were aware that federal regulations prohibit the use of these facilities by commercial interests (watermen). NNPDC staff noted that further investigation into determining funding sources and limitations on use for each of the region's public access boat ramps should be a future project undertaken by the NNPDC.

NNPDC staff held a local planning coordination meeting on March 11, 2015. NNPDC staff discussed and refined project ideas with county staff for the upcoming VACZM FY15 grant application. NNPDC staff announced that the Chesapeake Bay Implementation Grant (CBIG) for low income septic tank pump-out was funded by Virginia Department of Environmental Quality and that there was \$20,000 allocated to pump-outs. Discussions with county staff ensued regarding the appropriate timing of Chesapeake Bay Preservation Act five year septic tank pump-out notices. Richmond County staff stated that they were ready to send out five year septic tank pump-out notices to one of their magisterial districts, and the other counties stated that they would consider sending notices, since funding for pump-out for low income residents was currently available. NNPDC staff summarized the VACZM PDC Technical Assistance grant progress and informed those present of the NNPDC component to the ongoing Working Waterfront Plan. NNPDC staff explained that the project involved examining the Ampro Marine Railway in Weems, and investigating any local policies that either hinder or promote the revitalization of the property for future working waterfront use. Lancaster County staff agreed to assist NNPDC staff as needed in investigating the property and the associated zoning constraints. After the local coordination portion of the meeting, NNPDC staff then held a training session on the Virginia Institute of Marine Sciences (VIMS) Comprehensive Coastal Resource Management Portal. At the time of the meeting, Northumberland and Westmoreland Counties portals were online. NNPDC staff conducted a live online training showing the components of the portal, from the tidal marsh inventory to the preferred shoreline best management practices to the county toolbox. County staff noted that the new guidance from VIMS (the shoreline management decision tree) basically stated that shoreline property owners should only use living shorelines to protect their land from erosion. NNPDC staff explained that promotion of the use of living shorelines is the new policy of the Commonwealth to help increase wetlands, and combat sea level rise. Only two instances exist where living shorelines are not the recommended shoreline protection alternatives in the VIMS shoreline management decision tree: 1) long fetch, high wave energy shorelines and 2) shorelines where the waterway was narrow and encroaching into the waterway to build living shorelines would impede vessel navigation. County staff countered that land owners wanted reliability and that living shorelines were nowhere close to being as reliable as rip rap. NNPDC staff concurred that living shorelines took time to be established and

grow to provide protection, but that in terms of water quality and coastal habitat, they were much better than rip rap. NNPDC staff reassured representatives from Richmond and Lancaster Counties that VIMS was actively seeking grant funding to complete shoreline management portals for the remaining coastal counties in Virginia.

On July 21, 2015, NNPDC staff held a local planning coordination meeting. NNPDC staff briefed county staff on the progress of the current VACZM grant, as well as the status of the Northern Neck Low Income Septic Pump-out grant. NNPDC staff noted that the NNPDC had pumped out 114 low income household septic tanks with the \$20,000 in CBIG grant funds at an average cost of \$175. NNPDC staff further explained that the county breakdown of pump-outs was 39 pump-outs for Lancaster County, 32 pump-outs for Northumberland County, 32 pump-outs for Richmond County and 11 pump-outs for Westmoreland County. NNPDC staff stated that the scanned septic pump-out receipts would be emailed to each county so that county staff could add to their five year septic pump-out tracking databases in order to comply with Chesapeake Bay Preservation Act policies. NNPDC staff briefed all present on the newly formed Northern Neck Environmental Consortium, which is a group of designated staff persons from local environmental organizations. NNPDC staff mentioned that Lancaster County and the Town of Kilmarnock are represented on the Consortium, as well as the NNPDC. Other organizations involved in the Northern Neck Environmental Consortium include the Northumberland Association for Progressive Stewardship, the Friends of the Rappahannock, Northern Neck Land Conservancy, Northern Neck Soil and Water Conservation District, Northern Neck Master Gardeners, Northern Neck of Virginia Audubon, Northern Neck Chapter of the Native Plant Society, and Northern Neck Master Naturalists. NNPDC staff related that the mission of the Environmental Consortium is two-fold: to prevent duplication of efforts by better coordination, and to help spread the message of being more environmentally conscious when making everyday decisions. NNPDC staff explained that the NNPDC had submitted a grant to the VACZM to help support the Northern Neck Environmental Consortium with a website, tentatively called *nknkgreen.org* that would act as a clearinghouse for educational and outreach materials created by the various environmental groups. The website is envisioned to be a one-stop-shop where one could obtain information on how to reduce his/her impact on the local environment. In addition to the website content, NNPDC staff explained that there would be an environmental calendar where groups could post the dates and times of workshops, cleanups, seminars, tours and other environmental happenings. County staff replied that the website and calendar were a great idea and could help citizens become more knowledgeable about environmental issues in the Northern Neck.

NNPDC staff also updated those present on the status of the Northern Neck No Discharge Zone (NDZ) applications. NNPDC staff relayed that DEQ had presented the NDZ applications to the State Water Control Board, who then authorized them to send the applications to EPA for review. EPA staff had reviewed the applications and sent DEQ comments on the proposed NDZ applications. NNPDC staff has been corresponding with DEQ staff on the EPA comments and questions. Comments from EPA included why the Richmond County NDZ used a different methodology than the other three county NDZ applications and that some creeks that had proposed NDZs that had no pump-out facilities. NNPDC staff explained the reason the

Richmond County NDZ was different from the other counties was that DEQ wanted to propose NDZs to protect shellfish harvesting areas. Since Richmond County is in the upper reaches of salinity for growing oysters, only the three most downstream (most saline) creeks were included, as there were not sizable shellfish resources upstream from those three creeks in Richmond County. Since only a subset of the county waterways were to be proposed as a NDZ, NNPDC staff reasoned that an appropriately sized subset of the entire county boat population should be used in the NDZ pumpout calculations. In contrast to Richmond County's NDZ application, the other three county NDZ applications covered the entire county and used the entire county boat population in the NDZ calculations.

NNPDC staff addressed the second question regarding NDZs without a pump-out facility within the NDZ. Examples of these larger waterbodies that were the subject of this comment were the Nomini Creek and Lower Machodoc Creek in Westmoreland County. First NNPDC staff related, only the Virginia Tributaries were to be proposed as No Discharge Zones, while entire Potomac River is retained as a discharge zone. Therefore, if a vessel has a marine sanitation device with an overboard outlet, then boaters could navigate into the Potomac River and let the boat's wastewater flow. If a vessel has a holding tank (with no overboard outlet), or a portable toilet, then according to state law a boater cannot discharge raw sewage into State waters, so a boater would have to travel to a marina with a pump-out device in order to empty waste regardless of whether a No Discharge Zone area was in place. NNPDC staff noted anecdotally that most boaters venture out regularly into the "big water" (the Potomac River, Rappahannock River, or Chesapeake Bay) routinely, and rarely stay within coastal tributary unless they have a smaller boat (which do not have marine toilets) that is not capable of navigating the rough waters of the larger waterbodies. NNPDC staff noted that research on other approved NDZs in the nation did not turn up any without pump-out stations, so petitioning EPA to keep these creeks as a NDZ may be a losing battle. NNPDC staff related that the PDC is in negotiations to revise the NDZ applications to address the EPA comments with Virginia DEQ, but that no agreement had been reached as of yet.

After the local planning coordination meeting, NNPDC staff went online and loaded the pre-recorded EPA webinar entitled "Climate Change Adaptation Introductory Training for Local Governments". The webinar url is: <http://www2.epa.gov/communityhealth/local-government-climate-adaptation-training>. The training lasted approximately 30 minutes, and after the webinar, one of the county staff noted that most of the examples shown where climate change adaptation planning were undertaken was in large cities or metropolitan counties that have a large municipal budgets due to a large and diverse tax base. There was some discussion of the required effort it would take to create a climate change adaption plan for one of the rural Northern Neck counties, and most present agreed that the cost for producing such a plan would be prohibitively expensive and politically unpopular. NNPDC staff noted that the purpose of the webinar was to get county staff to start thinking of what local county resources might be at risk and how to help mitigate that risk, not necessarily to create a climate change adaptation plan. NNPDC staff noted that in FY10 through VACZM focal area funding (Task 12.06), NNPDC created a climate change vulnerability assessment that looked at both green infrastructure and grey infrastructure assets within the Northern Neck region and the impact of a three foot rise in sea level rise on those

assets. The study found that very little grey infrastructure was at risk, while green infrastructure was very much at risk. Regarding the grey infrastructure, one sewage treatment plant has a lagoon berm that is 8 foot tall, and that was the lowest elevation sewage treatment plant infrastructure that was vulnerable in the four counties. The treatment plant in question was a private treatment plant for a facility and not a public (county or town) facility. County staff inquired if roads were included in the grey infrastructure assessment, NNPDC staff responded yes. NNPDC staff noted that only one road was shown to be impacted through the analysis, Federal Farm Road in Westmoreland County. NNPDC staff noted that the two VDOT ferries, Sunnybank and Merry Point may also be impacted from a three-foot sea level rise.

The next local planning coordination meeting was held on August 27, 2015, and this meeting did not include a training opportunity. NNPDC staff discussed the further work towards a Virginia Working Waterfront Plan by explaining the VACZM grant that Middle Peninsula PDC received to hire a consultant, William Pruitt, former head of the Virginia Marine Resources Commission, to engage coastal Boards of Supervisors regarding county policy regarding working waterfront issues. NNPDC staff noted that they had worked with Westmoreland and Richmond County's staff and were on the agenda for the upcoming month's Boards of Supervisors meeting. NNPDC staff further explained that the effort was an attempt to have Board of Supervisor members rate their county policy and land use decisions regarding how friendly they were to working waterfront issues, and their willingness to look into some of the working waterfront tools available at the National Working Waterfront Network. NNPDC staff noted that this effort, coupled with the previous year's WWF case studies and the WWF inventory would be eventually combined into a state working waterfront plan, which would be the first such plan for a state in the Nation. There have been working waterfront plans created for regions, such as Puget Sound, but no one has attempted a statewide working waterfront plan. County staff noted that as of late, there seems to be a "gold rush" on state bottomland. There is a big uptick in the amount of applications for oyster cage and culturing of oysters in the creeks and rivers of the Northern Neck counties, and that conflicts between working waterfront businesses and residential uses will likely increase into the future.

The next issue discussed was the Virginia Stormwater Advisory Group (SAG), and integrating Virginia's Erosion and Sediment (E&S) control regulations with the Chesapeake Bay Preservation Act and new Stormwater Regulations. NNPDC noted that the Virginia Association of Counties had a survey question in their June newsletter on the options that the SAG was considering. NNPDC staff noted that even though the deadline for the survey had passed, if their county was a member of VACO, they should inform VACO staff of their county's position on the changing responsibilities regarding stormwater, E&S and the Chesapeake Bay Act provisions.

FEMA floodplain insurance was the next issue discussed, which was a topic suggested by one of the county staff members. County staff related that citizens were having trouble when their homeowner's insurance policy was renewed if any part of their property was impacted by the AO floodplain (which is a zone designation where there is possibility of 1 to 3 feet of water in sheet flow). Non-local insurance companies were requiring homeowner's to get an approved

elevation certificate within 30 days of the insurance renewal date or the insurance policy rate would increase. County staff noted that it was very difficult to hire a surveyor, get an elevation certificate and then have it approved by FEMA within the 30 day time period. NNPDC staff noted that this was not so much a FEMA issue as an issue with the insurance companies trying to minimize their risks.

The next subject, also suggested for the meeting agenda by county staff, were ideas for older waterfront subdivision water quality improvement grant projects. County staff noted that some of the waterfront subdivisions that were developed around the time of Chesapeake Bay Preservation Act implementation in the late 1980s could use some improvements on how stormwater and runoff is treated before reaching state waters. County staff were considering writing a grant to make some improvements and wanted to hear what ideas the group could gather for inclusion in a potential grant application. NNPDC staff suggested an inventory of the existing subdivision's 100 foot Resource Protection Area buffers, identify where the buffers were inadequate, and enhance the buffers in these locations. Another idea focused around was soil amendment, which is a Virginia Stormwater BMP, and adds compost to turf areas and incorporates the compost into the soil to alleviate compaction and to add biological processes to the soil media. This BMP increases infiltration as well as nitrogen processing within the soil media. A final idea proposed was to do a community wide assessment of the subdivision, and enlist the help of the Center for Watershed Protection for expertise. It was noted that the Town of Kilmarnock recently completed a watershed assessment with the help of the Center for Watershed Protection, and that county staff should contact town staff for more information.

Northern Neck Soil and Water Conservation District (NNSWCD) staff announced that the Virginia Shoreline Advisory Service (SEAS) was re-instituted with state funding to allow for two full time employees to be hire to help homeowners assess the best methods of protecting their shoreline. The NNSWCD was instrumental in reviving this important state program and had hosted a tour of successful shoreline projects to high level state environmental executives last year in the Northern Neck to illustrate the need for SEAS services. NNPDC staff assisted in that tour, producing maps for informational packages and presenting at the Hull Springs Farm living shoreline site visit.

The next local planning coordination meeting and training session was held on September 17, 2015. DCR staff contacted the NNPDC and requested another Virginia Outdoors Plan review/update. This training session was held before the local planning coordination meeting. DCR staff gave out contact information for the staff that developed the Virginia Department of Game and Inland Fisheries (VDGIF) Wildlife Action Plan, as well as the Virginia Tourism Plan and the Virginia Historic Resources Plan. DCR staff also gave information on how to access the Westmoreland and Belle Isle State Park Master Plans, if any county staff were interested. A county by county review of public access projects mentioned at the last NNK VOP review meeting was conducted. Updates for Lancaster County were that they received \$150,000 in grant funding from the VDGIF Grants to Localities for Public Boating Infrastructure grant program for a large boat ramp at the Windmill Point Marina in southeast Lancaster County. Northumberland County again expressed the need for improved paddle in access for Bush Mill Stream Natural

Area Preserve. Richmond County also received grant funding from VDGIF for rebuilding the boat ramp at Farnham Creek Landing, as well as adding parking and a pier parallel to the shoreline adjacent to the boat ramp. Westmoreland County updated DCR staff on the status of the VDOT enhancement grant at James Monroe Birthplace, a contractor was being selected for the work on the memorial and work to create the road to Monroe Creek would be completed by next year. After the road is completed, Westmoreland County hopes to secure grant funding for a state-of-the-art canoe and kayak launch at James Monroe's Birthplace. There was some discussion on Virginia's Scenic River Program, as Lancaster County expressed some interest in seeking that designation for the Rappahannock River.

After the DCR VOP Review training session, the local planning coordination meeting was held. NNPDC staff announced the Rappahannock River Basin Commission Summit to be held on September 23, with the theme "After Picking Ches Bay TMDL Low-Hanging Fruit, Now What?" NNPDC staff outlined the agenda for the Summit and mentioned that the nutrient trading scenario should be one of the more interesting parts of the Summit. NNPDC staff encouraged those present to attend the Summit.

The majority of the meeting involved the discussion of Virginia's Stormwater Stakeholder Advisory Group (SAG) and the meeting held with local governments of the Middle Peninsula and Northern Neck with DEQ stormwater staff in Saluda. At the meeting in Saluda, the deletion of the stormwater management program opt-out for local governments was discussed. Local government staff expressed concern that the SAG was overstepping its authority by eliminating the opt-out clause for local governments, when the opt-out option is currently in state law. Local government staff also expressed concern regarding the Chesapeake Bay Preservation Act land disturbance permits where local governments who have opted out being a Virginia Stormwater Management Program (VSMP) Authority have to perform the same duties of a Virginia Stormwater Management Program Authority for developments that disturb between 2,500 square feet and one acre of land, even though they are not a VSMP authority. NNPDC staff noted that the Chesapeake Bay Preservation Act land disturbance permit is not a stormwater permit, but in this instance, functions as one.

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III. Northumberland County Digital Zoning Map Production

NNPDC staff had previously worked on updating the digital zoning map for Northumberland County in 2004. However, the zoning was encoded within the digital county tax maps, and was parcel specific, which means that each tax parcel has a zoning classification in a column in the attached data table. While this is a viable approach to creating a zoning map, through the years, county staff did not update the zoning when parcels were subdivided and newly created.

Therefore, keeping the zoning map layer up-to-date was tedious. To complicate the zoning map display, Northumberland County has allowed split zoning of parcels. This means that part of a tax parcel is zoned in one class, while the remaining part of the parcel is zoned in another class. The split zoning combinations are usually Business and Agricultural, Waterfront Residential and Agricultural, or sometimes General Residential and Business. The old zoning data, using the tax parcels as the layer, had a placeholder in the zoning classification column called “split” which highlighted these parcels. The digital zoning map file was primarily a tax parcel map, not a zoning map. NNPDC staff did not want to create lines on the map that are not property lines, as on most digital tax parcel maps, the only lines present in the map layer are boundaries between distinctly owned properties. Therefore a supplementary zoning map layer was created that showed only the split zoned parcels. When loaded in the GIS software after the zoning map, the supplementary zoning map layer covered the split zoned tax parcels, giving the illusion that the zoning map was one seamless map layer. These additional steps needed to display the data, coupled with the zoning data by individual parcel made the county reassess how they stored zoning data. Northumberland County staff requested the NNPDC create a standalone zoning single digital map layer to display the zoning data for the county.

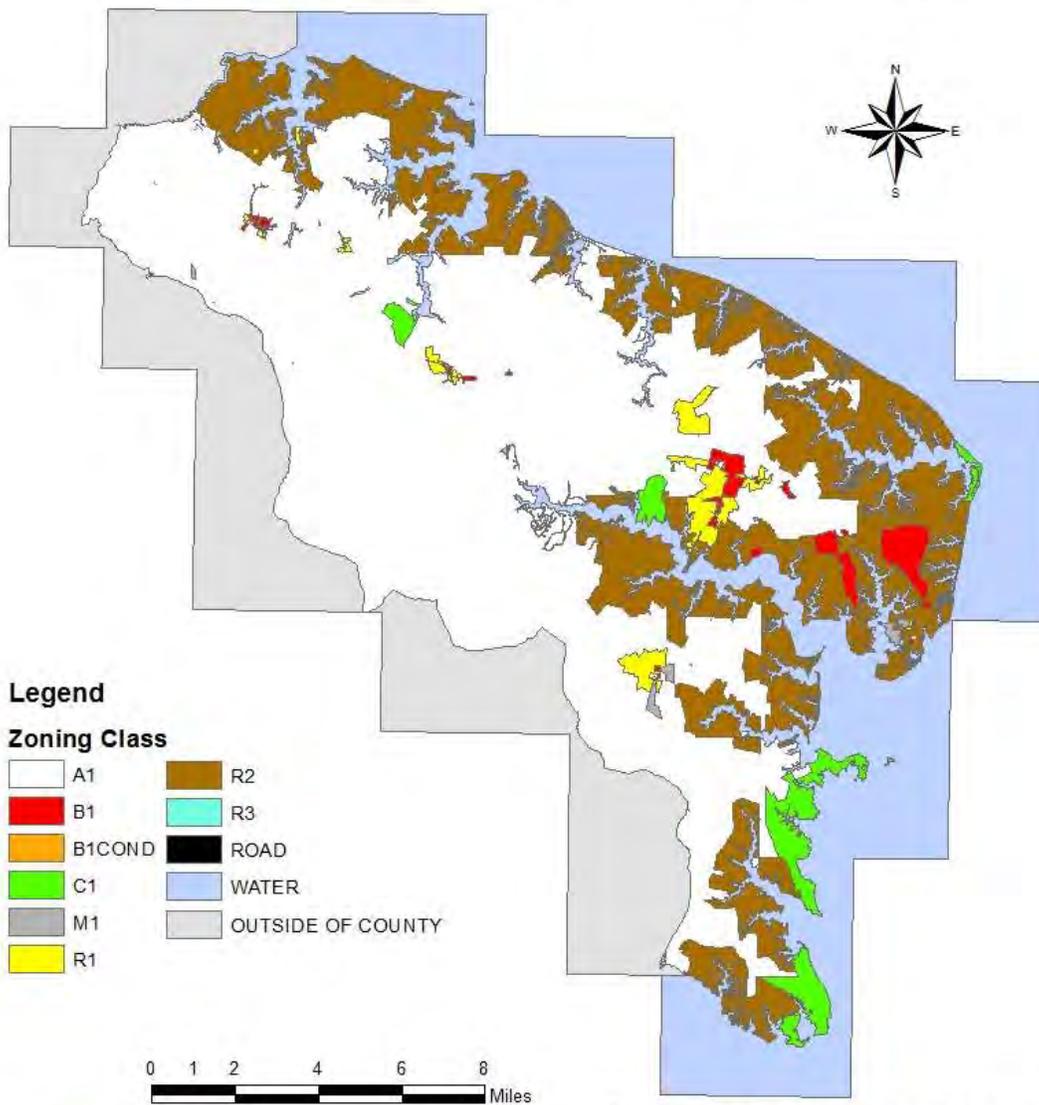
NNPDC staff worked on the old zoning map, with the intention of using the dissolve function to remove the boundaries between like zoning classes. When that operation was performed, NNPDC staff observed many hundreds of instances where the polygons were not joined properly, thus creating gaps and sliver polygons. When polygons are not joined correctly which happens when originally digitized or edited, each edge of the adjoining polygon and vertexes of both polygons are not lined up exactly. This can result from digitizing while zoomed out too far, or by editing polygons and forgetting to turn on the snap to vertex feature. The result is polygons that have empty gaps between them (slivers) or has overlapping edges. In both instances, when the dissolve function is used in the GIS software, unintentional polygons are created. NNPDC staff methodically went through each of the 54 tax maps and fixed all of the topology errors in the original digital tax maps. NNPDC staff did not track the number of these polygon topology errors, but staff estimated over 150 problem polygons were fixed.

Once the dissolve was performed on the Northumberland County zoning map to simplify the zoning classes within the county, NNPDC staff then loaded the old supplementary zoning layer using the GIS software. The supplementary polygons were digitized with correct topology in the spaces where the split zoning category previously existed. Once the split polygons were digitized, they were merged with the like zoned adjacent polygons.

NNPDC staff then took the laptop with the digital zoning map layers to Northumberland County to check the zoning data for accuracy. The official zoning map is located in the Building and

Zoning Office and consists of the 54 individual tax maps with zoning classifications coded. NNPDC staff examined each of the 54 tax maps as well as inserts to check the accuracy of the digital zoning map created by the dissolve polygons process. Corrections were made where necessary. The digital zoning layer was delivered to Northumberland County staff for inclusion in the Geographic Information System for use in planning and general reference. An image of the completed Northumberland County digital zoning map is shown below.

Northumberland County Zoning



This project was funded by the Northern Neck Planning District Commission and the Virginia Coastal Zone Management Program at the Department of Environmental Quality through Grant #NA15NOS4190164 of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, under the Coastal Zone Management Act of 1972, as amended.

IV. Northumberland County Water Trail Maps-Website

NNPDC staff contacted Northumberland County staff regarding the selection of the two creeks for water trail guides development. Northumberland County staff replied that Cockrell's Creek and the Reedville area would be an ideal location for a water trail. Northumberland County staff noted the various restaurants, the historic district, and the Reedville Fishermen's Museum as attractions that might be of interest to paddlers. In addition, the public boat ramp on Cockrell's Creek, Shell Landing, has a very large parking area and two boat ramps, so there is plenty of room for parking and rarely a wait to launch watercraft. NNPDC staff began work on the water trail brochure and guide. NNPDC staff has visited the Reedville Fishermen's Museum, and several of the restaurants that are mentioned in the water trail guide, and has personal knowledge of Reedville as a tourist destination. Cockrell's Creek, although somewhat wide of a creek is relatively well protected from wind driven large waves, making it suitable for small watercraft such as canoes and kayaks. With the proximity of the water trail to Omega Protein, a commercial fishing facility, there are large vessels that navigate Cockrell Creek, but they mostly fish on weekdays. Most paddlers, it is reasoned, will take to the water on weekends, thus limiting the interaction with large shipping vessels. In addition some paddler's may be interested in seeing large oceangoing ships up close, and the water trail goes past Omega Protein's dock. The water trail developed under this grant starts on a cover of Cockrell Creek, extends to the peninsula of Reedville, up to the Fishermen's Museum, and then across the creek to a local favorite restaurant, Cockrells Creek Seafood, or back to the launch point of Shell Landing. There are docks at the Crazy Crab and the Reedville Fishermen's Museum. Tommy's Restaurant is in the process of building a dock to accommodate those diners who want to arrive by boat.

The total length of the Cockrell Creek Water Trail is approximately 5 miles, and extends to approximately 6 miles if one includes a trip to Cockrell's Creek Seafood Deli, which is on the eastern side of Cockrell's Creek across from the village of Reedville. The Cockrell Creek Water Trail offers a cultural and historical trek, as opposed to a natural area ecological paddling experience, and in the accompanying guide, NNPDC staff briefly describe the history of menhaden fishing, of which the profits built the village of Reedville back in the late 1800s. An industrial landmark is described in the guide, locally known as the Stack, which is used as a navigation aid, as well as a reminder of Reedville's fishing history. Brief descriptions of each of the attractions highlighted in the village of Reedville are also included in the guide. As with all of the previous Northern Neck water trails produced by VACZM PDC Technical Assistance Grants, the Cockrell's Creek Water Trail Guide is available on the Northern Neck Tourism Commission's website and can be direct accessed at

http://www.northernneck.org/MAPS/cockrell_creek_water_trail_web.pdf

To view the entire Northern Neck Tourism Water Trail page, direct your browser here

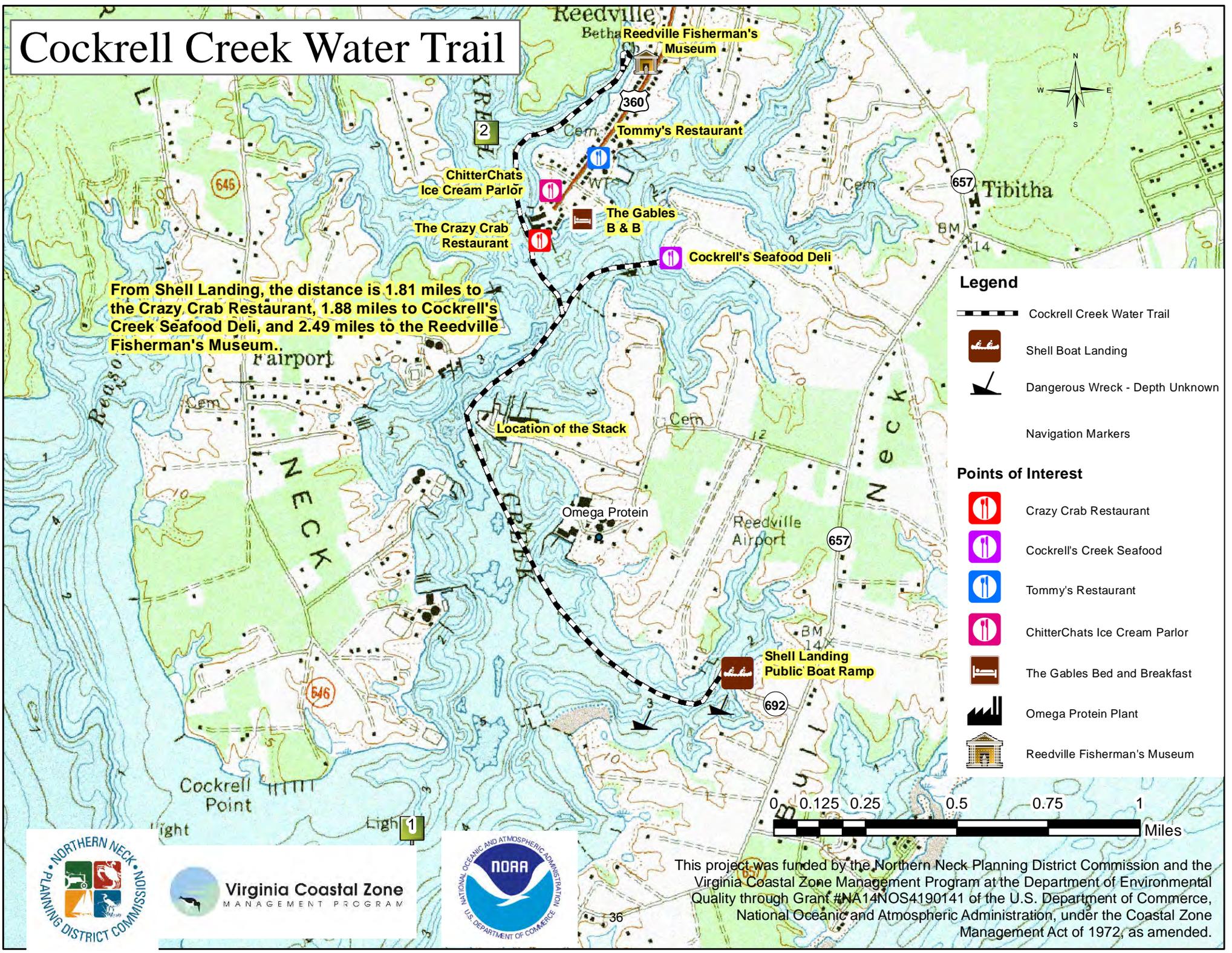
<http://www.northernneck.org/parks-nature-trails/>

On the next page is the Cockrell Creek Water Trail Guide, click on the link above to see the water guide for the Cockrell Creek Water Trail online.

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Cockrell Creek Water Trail

From Shell Landing, the distance is 1.81 miles to the Crazy Crab Restaurant, 1.88 miles to Cockrell's Creek Seafood Deli, and 2.49 miles to the Reedville Fisherman's Museum.



Legend

- Cockrell Creek Water Trail
- Shell Boat Landing
- Dangerous Wreck - Depth Unknown
- Navigation Markers

Points of Interest

- Crazy Crab Restaurant
- Cockrell's Creek Seafood
- Tommy's Restaurant
- ChitterChats Ice Cream Parlor
- The Gables Bed and Breakfast
- Omega Protein Plant
- Reedville Fisherman's Museum



This project was funded by the Northern Neck Planning District Commission and the Virginia Coastal Zone Management Program at the Department of Environmental Quality through Grant #NA14NOS4190141 of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, under the Coastal Zone Management Act of 1972, as amended.

Cockrell Creek Water Trail

From Shell Landing, the distance is 1.81 miles to the Crazy Crab Restaurant, 1.88 miles to Cockrell's Creek Seafood Deli, and 2.49 miles to the Reedville Fisherman's Museum.

Legend

-  Roads
-  Cockerell Creek Water Trail
-  Shell Boat Landing
-  Dangerous Wreck - Depth Unknown
-  Navigation Markers

Points of Interest

-  Crazy Crab Restaurant
-  Cockrell's Creek Seafood
-  Tommy's Restaurant
-  ChitterChats Ice Cream Parlor
-  The Gables Bed and Breakfast
-  Omega Protein Plant
-  Reedville Fisherman's Museum



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Shell Landing, the starting point for this paddling trail, is the crown jewel of boat ramps in Northumberland County. With plenty of parking and two ramps, there is hardly ever a wait to launch or retrieve your watercraft.



Shell Landing

Heading out into Cockrell's Creek from the landing, on the starboard side, you will see the Omega Protein fish processing plant. You will likely see large fishing vessels tied up at Omega Protein. In the past, fishing for menhaden helped build the town of Reedville with several companies engaged in menhaden fishing. Haynie Products, Reedville Oil and Guano, Standard Products Company and Zapata-Haynie were all involved in menhaden fishing and processing. In Reedville in the late 1800s, Main Street was called "Millionaires Row" due the profits made from menhaden fishing. Menhaden were rendered providing fish oil, fishmeal and fertilizer. Today while meal and fertilizer are still produced, the fish oil, rich in omega-3s, is the most valuable product derived from menhaden.

Further upstream from Omega Protein, there is a special smokestack, from the old Morris-Fisher Company which provided steam for processing menhaden. From the website <http://savethestack.blogspot.com>, the smokestack "served as a navigational landmark for working watermen and boaters but also as a welcoming beacon to the historic town of Reedville and surrounding areas."

The smokestack had deteriorated, had been hit by lightning numerous times, and was in a general state of disrepair. The Reedville community embraced the cause to "Save the Stack" and held numerous fundraising efforts including concerts and raffles, and raised \$300,000 to re-furbish the smokestack. The hope is that the stack will last another 100 years to show boaters the way to Reedville.



The Morris-Fisher smokestack landmark.

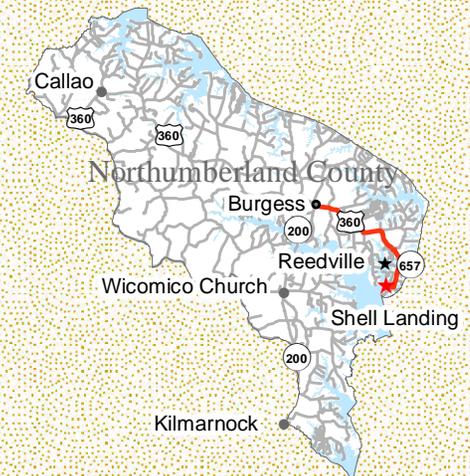
On Reedville's western corner is the Crazy Crab Restaurant. Their food is delicious, and they have deck dining so you can enjoy the bay breeze. They are usually open for lunch on the weekend, but check beforehand at <http://www.reedvillemarina.com/> for their hours of operation and other information. After your meal, head up Main Street a few doors to ChitterChats Ice Cream for a frozen dessert. Find out more about them at: <http://www.chitterchatsicecream.com/> Further upstream on the western edge of Reedville is the Reedville Fishermen's Museum, where the historic wooden workboats, the Elva C and the Claud W. Somers, are docked at the museum. Here you can learn all about the history of fishing in Reedville. Learn more at: <http://www.rfmuseum.org/> Making your way back the water trail, off to the east of Historic Reedville is a local favorite, Cockrell's Creek Seafood and Deli.



The Elva C and Claud W. Somers docked at the Reedville Fishermen's Museum

Cockrell's Creek Seafood and Deli is located across Cockrell Creek the Historic District of Reedville. Famous for their crabcakes, Cockrell's Creek Seafood and Deli also has non-seafood offerings as well. Learn more at: <http://www.smithpointseafood.com/> There is a lot of history in the area surrounding Reedville, so go out and explore!

Directions to Shell Landing follow: In the village of Burgess (at the intersection of Rt. 200 and US 360) head east on US 360 towards Reedville. The speed limit on the road will slow to 35 mph as you near Reedville, look for Rt. 657 Fleeton Road on the left. Take 657 and follow until you reach Rt. 692 Shell Landing Road. Take a right on Shell Landing Road.



NNPDC coordinated with Northumberland County staff on the selection of the second water trail to be developed, and suggested that since the Cockrell Creek Water Trail was a more urbanized water trail experience, it might make sense to have the second water trail be on a less developed waterbody. Northumberland County staff agreed, and chose the Coan River near Heathsville for the second water trail. Rowes Landing is located near Heathsville and is the primary access point for the Coan River Water Trail, although Forrest Landing is another public boat ramp roughly a quarter of a mile away on the Coan River and also could be used to access the trail. Both boat ramps are at the headwaters of the Coan River, and there are extensive marshes upstream from each ramp which provide opportunities for bird and wildlife watchers. The water is relatively shallow around the two boat ramps, approximately 3 feet deep. The shallow water is not easily accessed by power boats, so this stretch of the river may be limited to paddle craft. Around the area of the two boat ramps during the War of 1812, two raids to Northumberland County Courthouse (Heathsville) were launched by the British. These raids are detailed in the Coan River Water Trail guide, and on a historical marker on US Route 360 as well. The length of the water trail is approximately five miles and extends downstream (north) to the location of two historic steamboat landings, Coan Wharf and Bundick. While little remains of the Coan Wharf Landing, there is still a wooden bulkhead on the Bundick side of the river. In the late 1800s and early 1900s steamboats were the primary transportation in the Northern Neck region, connecting to the area to Baltimore and Norfolk on a regular schedule. Freight as well as passengers were carried by the steamboats. After the great Hurricane of 1933 as well as the emergence of the automobile as a viable means of transportation, steamboats were no longer practical and disappeared from local waterways. A good portion of the Coan River Water Trail traverses forested land with no development. These areas provides a natural setting for contemplating how the Northern Neck region looked a hundred years ago and offers opportunities to view wildlife on the shores, in the marshes and in the air. The Coan River Water Trail Guide is located on the Northern Neck Tourism Website, and can be directly accessed here

http://www.northernneck.org/MAPS/coan_river_water_trail_web.pdf

To view the entire Northern Neck Water Trail webpage point your browser here

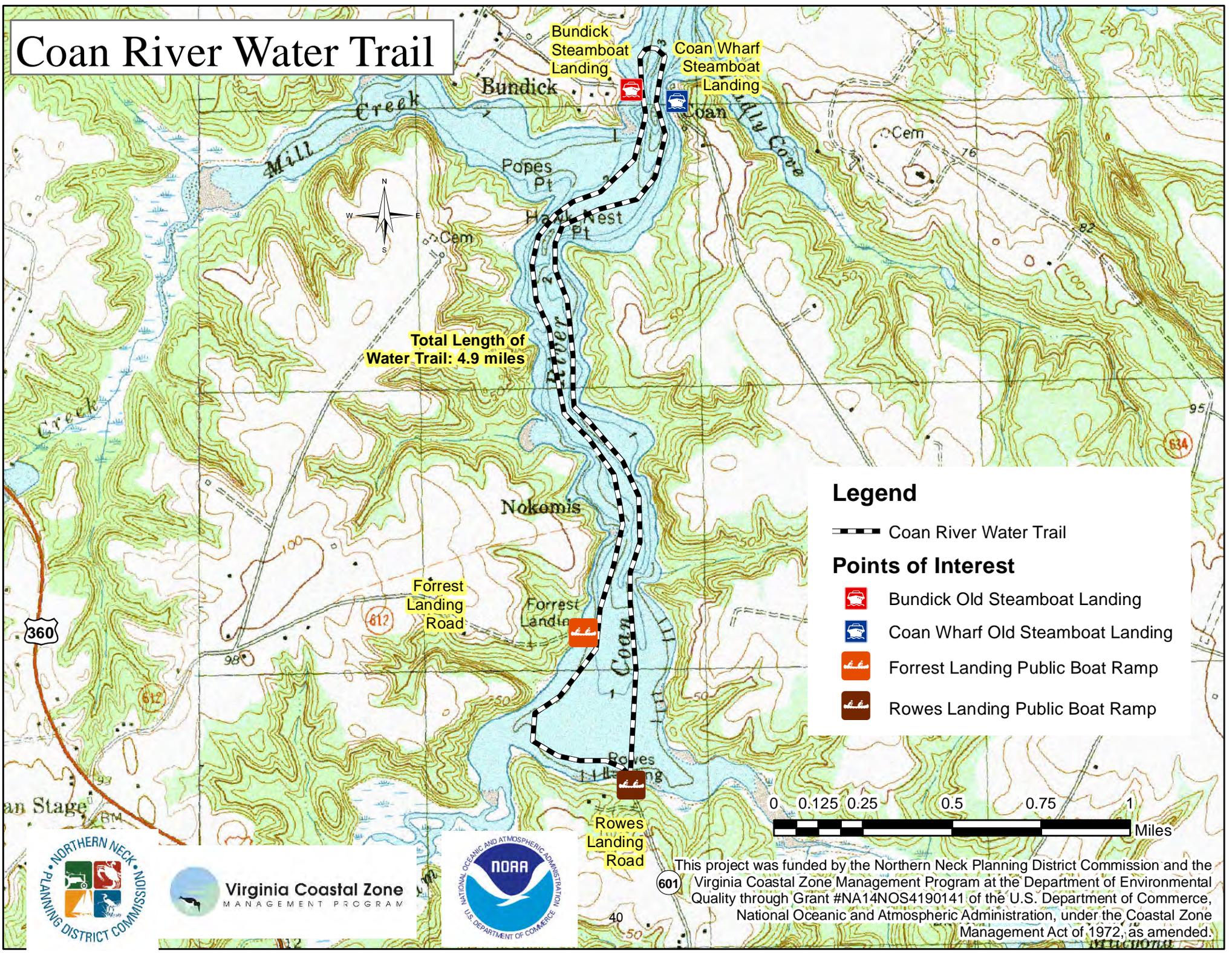
<http://www.northernneck.org/parks-nature-trails/>

On the next page is the Coan River Water Trail Guide, click on the link above to see the Coan River Water Trail Guide online.

NNPDC staff hopes that Northumberland County decides to continue and create more water trails within their county, and create a link to the long distance Potomac River water trail that is present in Westmoreland County in the future. Northumberland County has the most public boat ramps than any of the other Northern Neck PDC counties', thus it has opportunities for a multitude of water trails traversing the county's creeks.

(This space intentionally left blank.)

Coan River Water Trail



Total Length of Water Trail: 4.9 miles

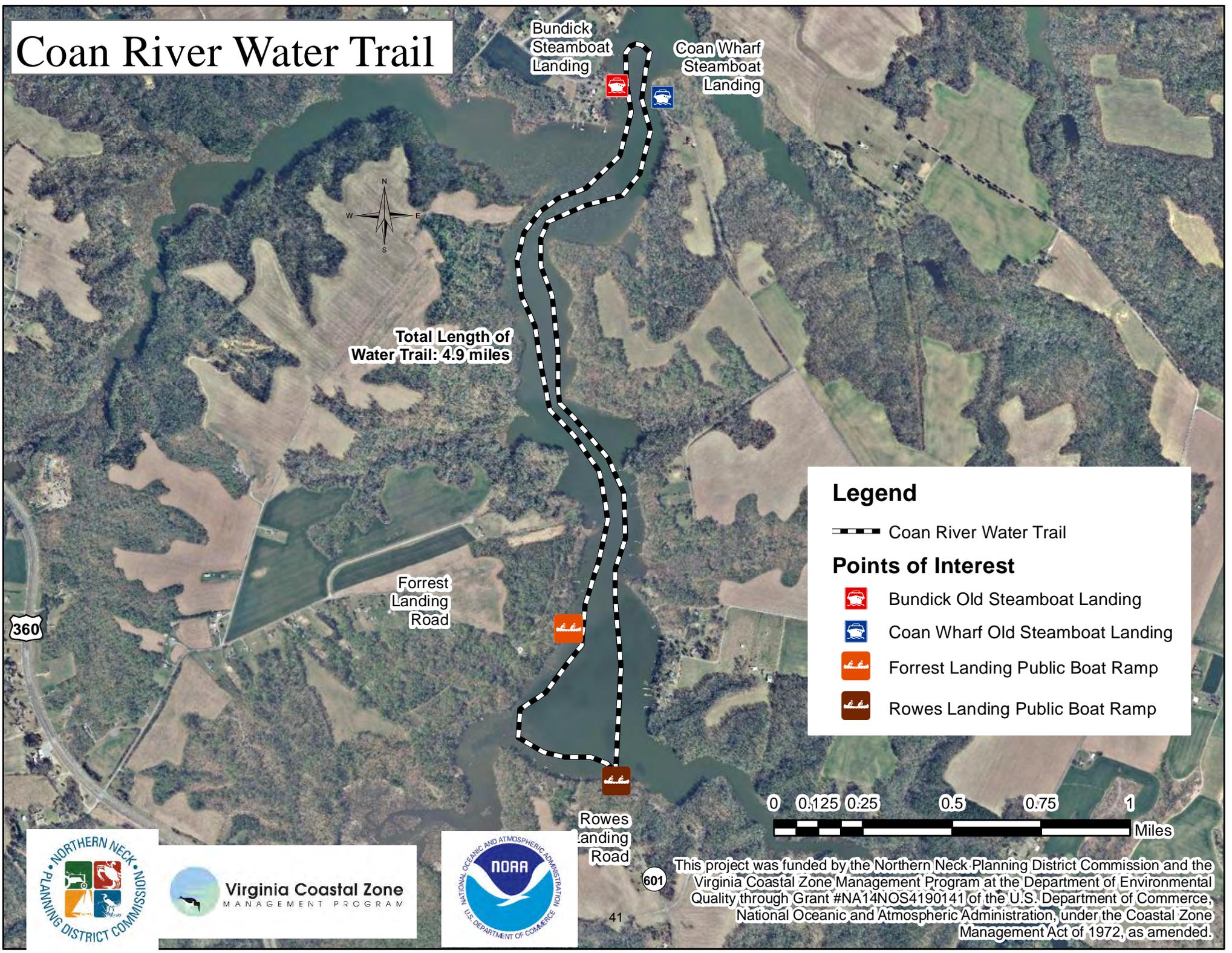
Legend

-  Coan River Water Trail
- Points of Interest**
-  Bundick Old Steamboat Landing
-  Coan Wharf Old Steamboat Landing
-  Forrest Landing Public Boat Ramp
-  Rows Landing Public Boat Ramp



This project was funded by the Northern Neck Planning District Commission and the Virginia Coastal Zone Management Program at the Department of Environmental Quality through Grant #NA14NOS4190141 of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, under the Coastal Zone Management Act of 1972, as amended.

Coan River Water Trail



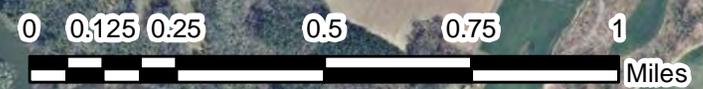
Total Length of Water Trail: 4.9 miles

Legend

Coan River Water Trail

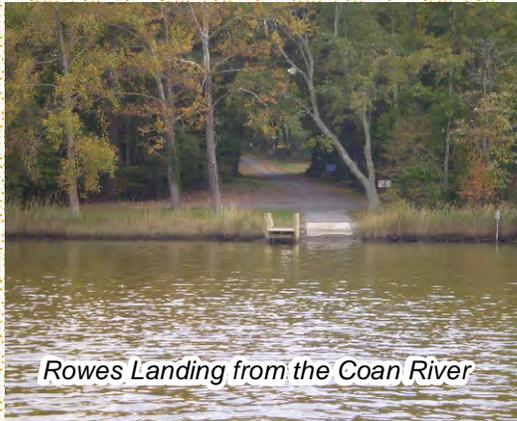
Points of Interest

- Bundick Old Steamboat Landing
- Coan Wharf Old Steamboat Landing
- Forrest Landing Public Boat Ramp
- Rows Landing Public Boat Ramp



This project was funded by the Northern Neck Planning District Commission and the Virginia Coastal Zone Management Program at the Department of Environmental Quality through Grant #NA14NOS4190141 of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, under the Coastal Zone Management Act of 1972, as amended.

The Coan River is the first major river on the Virginia side of the Potomac River as you travel upriver from Smith Point where the river meets the Bay. The name of the river comes from the Chickacoan Indians that inhabited the area before European settlers arrived. Rowes Landing, near Heathsville, is the access point for the Coan River Water Trail. Nearby Forrest Landing can also be used to access this water trail.



Rowes Landing from the Coan River

Rowe's and Forrest Landing are located very near the upper reaches of the Coan River, near the county seat of Heathsville. The two headwater streams that feed the Coan River are located on either side of Rowes Landing, and both have extensive marsh systems that line the banks. These marshes would be a great place for birdwatchers to spot green herons, kingfishers and other coastal birds. During the War of 1812, on August 7, 1814, ten British ships and smaller vessels appeared on the Coan River. The invaders sent three barges to capture three American schooners near Northumberland Court House (Heathsville). The Lancaster County militia repulsed the attack until British reinforcements arrived. Before leaving, the British seized the schooners and destroyed property at Northumberland Court House. Several years later, on October 4, 1814, two British detachments of 3,000 infantry invaded Northumberland County from the Coan River. After initially resisting, the outnumbered militia retreated.

The British captured arms, ammunition, and personal property before debarking.

Early colonists designated Coan Wharf as a tobacco shipping center, but the wharf never grew to its potential. Instead of tobacco, the Coan River region became a magnet for canneries, fish processing and packing plants. Coan Wharf is located at the northern turnaround point on this water trail, and was a bustling steamboat port in the late 1800s and early 1900s. No evidence of a steamboat landing at Coan Wharf remains.

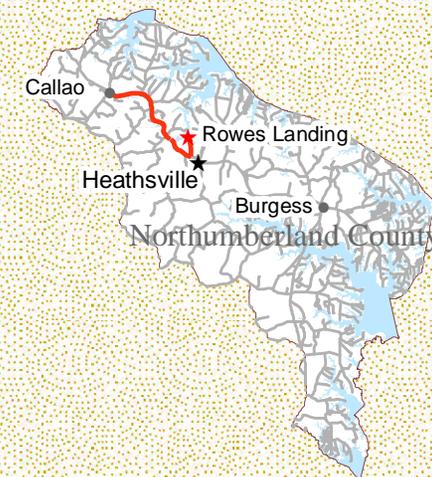


Coan Wharf - old Steamboat Landing

On the opposite shore from Coan Wharf, is the historic steamboat wharf of Bundick. Bundick still has a wooden bulkhead present and it is possible to envision what the dock may have looked like during the Steamboat. The Coan River is surprisingly narrow at this point, although the river still boasts a relatively deep channel at 8 feet. The steamboats brought manufactured goods from Philadelphia, Baltimore and Norfolk to the Northern Neck and carried back canned goods, fresh fish and produce, and of course, passengers. It was a two day trip to Baltimore from the Coan River ports, as the steamboats were not very fast, and they stopped at multiple ports along the way. In the Northern Neck in the late 1800s to early 1900s the steamboats were the only transportation and functioned like railroads did in other parts of Virginia.

If you fish the Coan River in the late Spring into the Summer, you can catch spot, croaker and a relative newcomer to the area, puppy drum. Other species likely to be caught are perch, striped bass and the occasional catfish. To catch most of the species, you can go the traditional route and use a bottom rig with a sinker and squid or bloodworms as bait. However, using a small 1/4 to 3/8 ounce jighead, topped with a curly tail grub, will require more finesse, but may yield larger fish. Two techniques to try with the jig are a slow bounce on the bottom retrieve for bottom feeding species like croaker and spot, and a slow steady retrieve for striped bass and perch. Vary your lure retrieve to see what the fish like that day!

Directions to Forrest Landing follow: In the village of Callao (at the intersection of Rt. 202 and US 360) head east on US 360 towards Heathsville. The speed limit on the road reduces from 55 mph to 45 mph as you near Heathsville, look for Rt. 601 Rowes Landing Road on the left. Take 601 and follow until you reach the end of the road, where you will find Rowes Landing Public Boat Ramp.



V. Marketing Northern Neck Water Trails

Through previous Virginia Coastal Zone Management Program Grants, NNPDC staff, cooperating with Northern Neck Tourism Commission (NNTC) staff, have created ten water trails in three counties. During this grant period, NNPDC staff created two water trails in Northumberland County to bring the total number of trails to twelve (12), encompassing all four Northern Neck counties. The Northern Neck Water Trail System is comprised of the following water trails, in Westmoreland County, Monroe Bay/Creek Water Trail, Currioman Bay Water Trail, Lower Machodoc Water Trail, Bonum Creek Water Trail; in Northumberland County, Cockrell Creek Water Trail, and Coan River Water Trail; in Richmond County, Cat Point Creek Water Trail, Morattico/Lancaster Creek Water Trail; in Lancaster County, Mulberry/Deep Creek, Greenvale Creek, Corrotoman River, Little Oyster Creek. In addition to the interior creek/river water trails, there are also two long distance water trails, one on the Potomac River that traverses Westmoreland County, and another on the Rappahannock River, a long distance trail traverses Lancaster County. In future years, NNPDC and NNTC staff plan on connecting these long distance water trails through Richmond and Northumberland Counties.

For public outreach, the Northern Neck Water Trails that have been created by NNPDC staff have been placed on the Northern Neck Tourism website, <http://www.northernneck.org>. In addition to introducing the public to some of the Northern Neck Water Trails, NNPDC staff also saw an opportunity to raise the profile of the Northern Neck Chesapeake Bay Public Access Authority (NNCBPAA). NNPDC staff, along with NNTC staff, formulated a marketing plan for both the NNCBPAA and the Northern Neck Water Trails. The marketing plan involved press releases to the local newspapers: Northern Neck News in Richmond County, Westmoreland News in Westmoreland County, Rappahannock Record in Lancaster County, and Northumberland Echo in Northumberland County. In addition to local newspapers, NNPDC staff with the help of NNTC planned on posting water trail marketing information on the Northern Neck Tourism Commission's Facebook, Pinterest, Tumblr, Twitter, and Instagram accounts to reach the approximately 65% of American adults who use social networking sites.

The plan was to start off with a Northern Neck Chesapeake Bay Access Authority Press Release, and then follow with two individual water trail experience pieces. NNPDC staff created the Northern Neck Chesapeake Bay Public Access Authority press release which highlighted a donation from the estate of by Charles Fears. Mr. Fears was the first person to catch a fish off of Northumberland County's Great Wicomico fishing pier, which was partially funded by the VACZM in 2001. Mr. Fears instructed the executor of his estate to pay all debts, and donate the remaining funds to the NNCBPAA. The press release was sent to the local and regional newspapers on May 12, 2015, but none of the local papers published the press release. NNPDC staff resent the press release in Mid-July 2015, and three of the local newspapers printed the press release were Northumberland Echo, Rappahannock Record and Westmoreland News. The press release contained information about the NNCBPAA, but also mentioned how to access the water trails through the Northern Neck Tourism Commission website. On the following page are images of the press releases as published in the aforementioned newspapers.

A windfall for Public Access Authority

The Northern Neck Chesapeake Bay Public Access Authority (NNCBPAA) has received a donation from the Estate of Charles Fears in the amount of \$3,169.61. The funding will be used to assist the Authority in its mission:

- to increase the usefulness of existing sites
- to create new public water access sites
- to increase public awareness of the Authority and its ability to accept donations of funds or waterfront property to enhance public access

The Northern Neck Chesapeake Bay Access Authority was formed in 2006, and consists of the Counties of Lancaster, Northumberland, and Westmoreland. To date, the Northern Neck Chesapeake Bay Public Access Authority has:

- created an inventory of existing public water access sites
- helped fund the

enhancement of a public water access boat launch site (Bonum Creek Landing in Westmoreland County)

- partnered with the United States Army Corps of Engineers in 2010 to create a Northern Neck Regional Shallow Draft Navigation and Sediment Management Plan to estimate the costs of dredging local federal creek navigation channels

- assisted Lancaster and Richmond Counties in creating successful grant applications to the 2014 Virginia Department of Game and Inland Fisheries Grants to Localities for Public Boating Access Program. Lancaster County received approval for a Large Boating Access Site at Windmill Point Marina; Richmond County received approval for a Medium Boating Access Site to improve the boat ramp at Farnham Creek Landing and provide additional parking.

For more information

on the NNCBPAA or to inquire about donating a property, visit nnpdc.org and click on Public Access or call Stuart McKenzie at 804.333.1900, ext. 25. Maps

Get the News as it happens in
the palm of your hand. Sign up
for Text Alerts at
northumberlandecho.com

Northumberland Echo, July 29, 2015



Area public access authority receives gift from Fears Estate

WARSAW—The Northern Neck Chesapeake Bay Public Access Authority has received a donation from the Estate of Charles Fears in the amount of \$3,169.61.

The funding will be used to assist the authority in its mission to increase the usefulness of existing sites, create new public water access sites and increase public awareness of the Authority and its ability to accept donations of funds or waterfront property to enhance public access, said Northern Neck Planning District Commission environmental planner Stuart McKenzie.

The authority has:

- Created an inventory of existing public water access sites.

- Helped fund the enhancement of a public water access boat launch site, Bonum Creek Landing in Westmoreland County.

- Partnered with the U.S. Army Corps of Engineers in 2010 to create a Northern Neck Regional Shallow Draft Navigation and Sediment Management Plan to estimate the costs of dredging local federal creek navigation channels.

- Assisted Lancaster and Richmond counties in creating successful grant applications to the 2014 Virginia Department

of Game and Inland Fisheries Grants to Localities for Public Boating Access Program.

Lancaster County received approval for a large boating access site at Windmill Point Marina. Richmond County received approval for a medium boating access site to improve the boat ramp at Farnham Creek Landing and provide additional parking.

To inquire about donating property, visit nnpdc.org and click on Public Access, or call McKenzie at 333-1900, ext. 25.

Maps of Northern Neck water trails are available at northernneck.org under the Recreation tab.

Westmoreland News, 7-30-15

Northern Neck Chesapeake Bay Public Access Authority receives donation

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Maps of Northern Neck water trails are available at northernneck.org under the Recreation tab.

The marketing plan was intended to introduce the NNCBPAA to the public with the above press release and follow up with two water trail experiences, chronicled by NNPDC staff. NNPDC and NNTC staff contacted Department of Conservation and Recreation staff at Belle Isle State Park in Lancaster County in late July to schedule a paddle trip on the Mulberry Creek/Deep Creek Water Trail. The intent of the trip was to take pictures, document the paddling experience, and publicize the new paddle-in campsite that was recently constructed at Belle Isle State Park near the mouth of Mulberry Creek. NNPDC staff met with DCR staff and launched the canoe at the car top launch facility within Belle Isle State Park on Mulberry Creek. NNPDC staff paddled the creek, capturing photos of a kayaker and a couple of canoeists enjoying a morning paddle on Mulberry Creek. NNPDC staff photographed seagulls, an osprey and watched the ospreys swoop and attack a blue heron that was feeding nearby. NNTC staff traveled by land to the remote paddle in campsite to take pictures of the canoeist arriving. DCR staff gave a tour of the paddle in campsite, and NNPDC staff took photographs. NNPDC staff wrote an article describing the Mulberry Creek/Deep Creek Water Trail paddling trip in detail, along with 6 photographs that showed many of the sights that were described in the text. NNTC sent the article to all local newspapers the first week of September, but none of the papers printed the article. One newspaper, noted that the article (and the photographs) did not lend itself well to the format of the weekly paper, but was considering using the article for next year's summer supplement to the newspaper. If the Mulberry Creek/Deep Creek Water Trail article does get published in the seasonal newspaper supplement, NNPDC staff will document the article in the future.

When discussing alternative ways to market water trails in the Northern Neck, NNTC staff suggested to NNPDC staff to post the water trail articles on the Northern Neck Tourism Commission's blog page. The web link to the Mulberry Creek/Deep Creek Water Trail article is: <http://visitvirginiasonthernneck.blogspot.com/> NNPDC staff, working with NNTC staff posted the link to the Mulberry Creek/Deep Creek Water Trail article on the NNTC Facebook account and below is a screenshot of the post on Facebook.



NNTC staff also posted the link to Mulberry Creek/Deep Creek Water Trail article to the Northern Neck Tourism Pinterest account, and the link to that post is:

<https://www.pinterest.com/pin/374924737707454886/>

NNTC posted the link to the Northern Neck blog containing the Mulberry Creek/Deep Creek Water Trail article to the Northern Neck Tourism Tumblr account and the link to that post is:

<http://northernneck.tumblr.com/>

Since the Mulberry Creek/Deep Creek Water Trail was located on a tributary to the Rappahannock River, NNPDC staff wanted the second water trail experience article to be on a tributary to the Potomac River, and chose the Currioman Bay Water Trail in Westmoreland County. Currioman Bay is at the western edge of the mouth of Nomini Creek, and is fairly well exposed to the wind and waves of the Potomac River. For this reason, the Currioman Bay Water Trail is recommended for intermediate to advanced paddlers, as the wind can generate waves that might swamp inexperienced paddlers. The direction of the wind is very important, as a west wind will create larger waves than say, a south wind, due to the orientation of the Potomac River at this location. Currioman Bay is partially sheltered by Hollis Island (locally known as Sharkstooth Island due to the abundance of sharks tooth fossils that can be found on the beach). The island is little more than thin strip of sand that separates the bay from the Potomac River. The island is privately owned and the owner sells annual passes for paid members to enjoy the beach. In years past, the Island was much more substantial in width, but erosion has eaten away at the island, and while vegetation is still present on both sides of the island, the middle of the island is bare sand and is frequently overwashed during storm events. NNPDC and NNTC staff traveled overland to Currioman Landing, a Virginia Marine Resources Commission Public Boat Ramp, and launched the antiquated aluminum canoe into a 8 knot northeasterly wind. The waves were approximately a half foot in height but the marine weather forecast predicted no increase in the wind speed through the afternoon. NNPDC and NNTC staff paddled the width of the bay, and after arriving on the leeward side of Hollis Island, the waves (and wind) abated to negligible size. NNPDC staff waded along the island shoreline, careful not to set foot on the island. NNPDC and NNTC staff took photographs, examined the terrestrial vegetation, and an old structure on the island (possibly a hunting shack, as this area is frequented by waterfowl hunters) and examined some comb jellyfish in the water near the shore. When looking back towards Westmoreland County, the sun shown on the water and waves and looked like a thousand diamonds strewn across a green blanket. The sun was dipping low in the horizon, and it was time to head home. The trip back to Currioman Landing was a much easier paddle, as the canoe was traveling with the wind and waves, instead of against them. NNPDC staff made sure to take photographs of the inlet for Currioman Landing from out in Currioman Bay, because it is important to remember where you launched your water craft, and more importantly parked your vehicle so that you can make the trek home. NNPDC drafted an article on the paddling trip on the Currioman Water Trail, selected representative photographs, and with the assistance of NNTC staff posted the article on the Northern Neck Tourism Commission's blog:

<http://visitvirginiasonthernneck.blogspot.com/>

In addition to posting the Currioman Bay Water Trail on the Northern Neck Tourism Commission's blog, NNTC staff also posted a notice on Facebook pointing readers to the blog and a screenshot of the post is shown below.



The Northern Neck Tourism Commission Facebook account screenshots are shown because, as time passes new posts are placed above old posts, so it takes a bit of scrolling to go back in time to view the posts. To see the posts on the Northern Neck Tourism Commission Facebook page go to:

<https://www.facebook.com/VisitNorthernNeckofVirginia/>

In addition to posting a link to the blog on the Northern Neck Tourism Commission Facebook page, NNPDC staff, with assistance from NNTC staff posted link on the Northern Neck Tourism Pinterest account:

<https://www.pinterest.com/pin/374924737707689784/>

A link was also posted on the Northern Neck Tourism Tumblr account and the web address for that account is:

<http://northernneck.tumblr.com/>

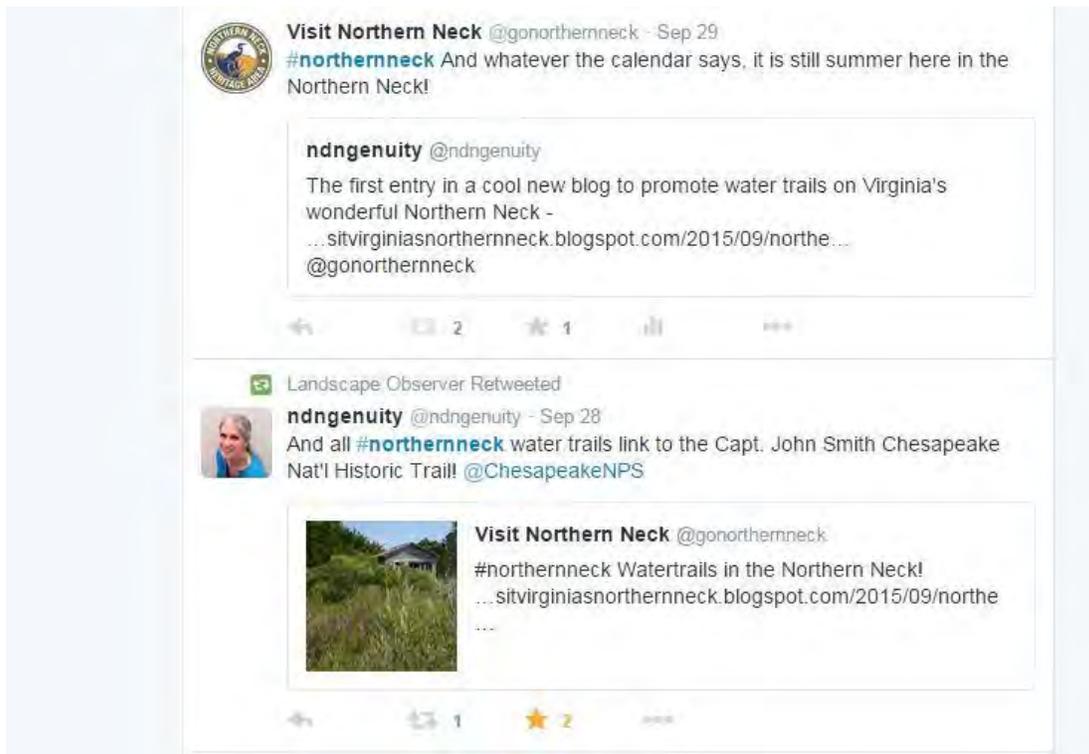
NNPDC staff, with assistance from NNTC staff also posted on the Northern Neck Tourism Twitter Account on September 10, the link to the Northern Neck Tourism blog with the Mulberry Creek/Deep Creek Water Trail article and again on September 21 on the Currioman Water Trail paddle trip. The link to the Northern Neck Tourism Twitter account is

<https://twitter.com/gonorthernneck>

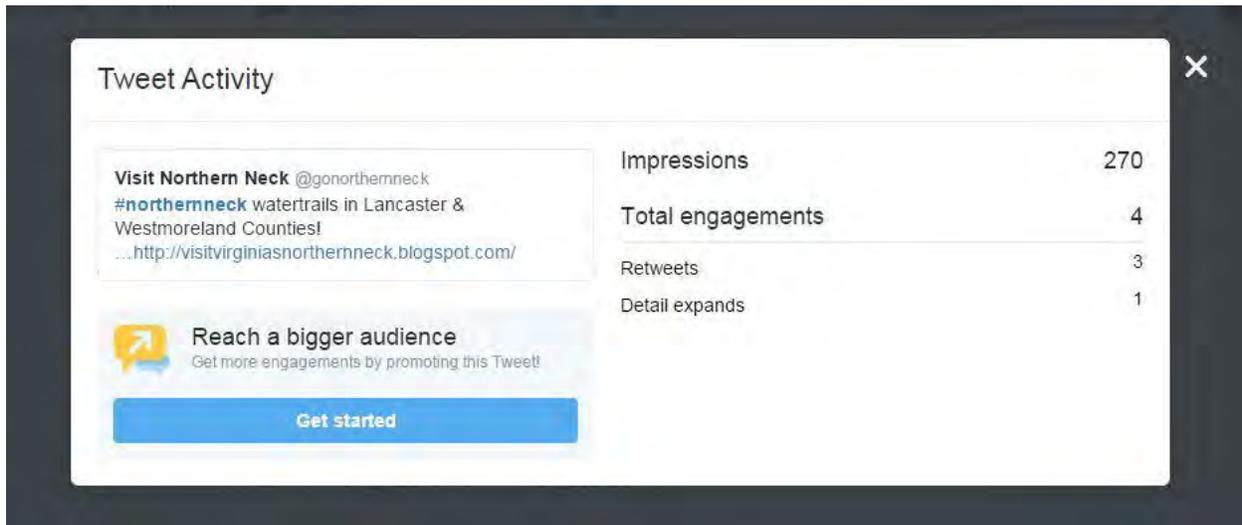
The Twitter post for the Currioman Water Trail Tweet are shown in the image below:



The post above was re-Tweeted, mentioning the fact that the Currioman Bay Water trail is proximate to the John Smith trail, and the image from that re-Tweet is below:



Twitter allows users to examine the analytics of their posts and an analysis was done on the September 10 Tweet and the image showing the analysis is below:



As previously reported in this year's Grant Product #4, the link to the Northern Neck Water Trails on the Northern Neck Tourism webpage is:

<http://www.northernneck.org/parks-nature-trails/>

When NNPDC staff reviewed the water trails created during previous VACZM PDC Technical Assistance grant years and noticed some inconsistencies: 1) the second grant year set of water trails had total length of the water trail, while the first grant year set did not, and 2) the second grant year set of water trails had three pages, the extra page being a map of the water trails over a current aerial photo, while the first grant year set only had two pages, with no aerial photo water trail page. Therefore, to be consistent with the other Northern Neck Water Trail Maps, NNPDC staff updated six of the water trail maps to have the total mileage of the water trail, and add page with an aerial photo with the water trail overlain. The maps that were updated to be consistent were: in Lancaster County, the Greenvale Creek Water Trail, the Little Oyster Creek-Fleets Island Water Trail; in Richmond County, the Cat Point Creek Water Trail, the Morrattico Creek-Lancaster Creek Water Trail; and in Westmoreland County, the Monroe Creek-Monroe Bay Water Trail and the Currioman Water Trail. The newly revised three-page water trails listed above were posted to the Northern Neck Tourism webpage, and you can view them at the link cited previously.

To further enhance the digital delivery and marketing of the Northern Neck Water Trail Guide information, NNPDC staff created a Google Maps internet mapping application that shows all of the twelve Northern Neck Water Trails in one interactive web map. The water trail lines were converted from ArcGIS format to Google Maps format, all water trails were combined together into one file, as well as the navigation marker points and the points of interest ArcGIS files. The attribute table for the GIS files need some additional information to display correctly in Google Earth, and NNPDC edited and added that information so users could see the relevant information

to help them navigate the water trails. When accessing the Google Map via the link posted on the Northern Neck Tourism Water Trail Webpage, users can zoom into a selected water trail of their choosing and use the mapping application to site landmarks for navigation, check navigation day marks for location information and generally assist a paddler in way finding while out on the water. The link the Google Map Northern Neck Water Trail website created by NNPDC staff is here:

<https://www.google.com/maps/d/edit?mid=z8N6GigQc1Qw.kBh7kBtpZI4w&usp=sharing>

Alternatively, you can access the Northern Neck Water Trails Google Map from the Northern Neck Tourism Commission's webpage at <http://www.northernneck.org/> then click on "Visit", and from the drop down menu click on "Parks, Nature & Water Trails", and scroll down the Water Trails heading, and finally, click on "Live, GPS-ready water trails for the Northern Neck".

NNPDC staff, as noted in Product #2 of this grant, coordinated a Virginia Outdoors Plan (VOP) Update Meeting with staff from the four counties, state park staff, land conservancy staff and others. At that meeting, NNPDC staff were informed of the Virginia Outdoor Plan Mapper. NNPDC staff inquired if the Northern Neck Water Trails could be included in the VOP Mapping application. DCR staff stated that would be possible, and gave NNPDC staff contact information of the person that manages the Virginia Outdoor Plan Mapping website. NNPDC staff sent the ArcGIS water trail routes to the DCR staff who manages the mapping website. The DCR staff person stated that the water trail route map files worked great and were integrated into the Virginia Outdoor Plan Mapper. NNPDC staff checked the VOP Mapper website and noticed that not all Northern Neck Water Trails are shown, but that one, the Little Oyster Creek-Fleets Island Water Trail was displayed. NNPDC staff will follow-up with DCR staff to work to get the remaining 11 water trails to display on the Virginia Outdoor Plan Mapping website, and will inquire to see if a link can be inserted from the VOP Mapping Website can click a link to send them to the Northern Neck Tourism webpage to download or view the water trail guide for the section that was queried. The web address to access the Virginia Outdoor Plan Mapper is here: <http://dswcapps.dcr.virginia.gov/dnh/vop/vopmapper.htm>

NNPDC and NNTC staff plan on continuing the promotion of the water trails created with help from the Virginia Coastal Zone Management Program and will report progress through future PDC Technical Assistance Grant reports.

VI. Benefits Accrued from Prior CZM grants

NNPDC staff and Northern Neck Chesapeake Bay Public Access Authority staff have been working towards a comprehensive network of water trails throughout the four county Northern Neck region. In previous grant years, PDC Technical Assistance Grants have allowed the NNPDC to build on work from previous years to create a network of 10 water trails within three of the four Northern Neck counties. Beginning with the VACZM FY11 grant year, NNPDC began creating water trail guides for Lancaster, Richmond and Westmoreland Counties and created a water trail web page on the Northern Neck Tourism website. Two water trails were created in each of the three counties for a total of six (6) water trails. In the VACZM FY12 grant year NNPDC staff expanded on the water trails for Lancaster and Westmoreland Counties, creating an additional two water trails in each county, making the total number of water trails ten (10) as well as a long distance water trail on the Rappahannock and Potomac Rivers, respectively. The Northern Neck Tourism website was modified so that the Lancaster and Westmoreland Counties' map showing the long distance water trails in the Potomac and Rappahannock Rivers served as the portal to the individual water trail maps and guides.

In the VACZM FY14 (current) grant year, NNPDC staff were able to create two new water trails in Northumberland County for a total of twelve (12), so that all four Northern Neck counties had at least two water trails for paddlers to enjoy. A local non-profit group had previously created a Paddler's Guide for Northumberland County, but that map only showed access points, and did not propose a suggested route, or offer any local history, culture or ecologic or environmental information regarding the waterways in the county. The new water trails, on Cockrell Creek (Reedville) and the Coan River (near Heathsville) contain information on local history, local cultural points of interest and environmental information.

Continued and steady VACZM grant funding allows NNPDC staff to phase projects that are too big to accomplish in a single grant year. Being able to build on work year after year allows larger projects to be completed, and past projects to be refined. This grant year's work exemplifies the aforementioned process, as Northumberland County was added to the water trail network, and previous VACZM grant work (water trail guides created in FY11) was modified to be consistent with the FY12 and FY14's water trail guides.